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SEARCH REQUEST FORM

| Access D8# | <u>. </u> |
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| \ \ . | Scientific and Technic | al Information Center | | |
|---|--|---|---------------------------|----|
| Requester's Full Name: AN Art Unit 1641 Phon Mail Box and Bldg Room Locat | e Number 306 - 556 | b.xaminer = : 77568 D Senal Number 09/9 ults Format Preferred (circle) P | 135 417 | |
| f more than one search is sub | omitted, please prioriti | ze searches in order of need | <u> </u> | |
| include the elected species or structure: | s, keywords, synonyms, acroi ms that may have a special m | as specifically as possible the subject nyms, and registry numbers, and comb eaning. Give examples or relevant cit diabstract. | oine with the concept or | |
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Result
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Copyright (c) 1993 - 2003 Compugen Ltd.
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         AAR11114
AAR38476
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AAY29997
AAY29587
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Collagen peptide a Sequence of peptid Cell binding pepti Collagen binding p Collagen cell bind Collagen fibronect Synthetic peptide Portion of an al c Collagen cell bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                Description
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AAR11114
ID AAR1
XX:
AC AAR1
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|----|----|-------|------|----|----------|--------------------|
| 10 | 80 | • | 16 | 17 | AAR92859 | Collagen fragment |
| 11 | 80 | 100.0 | 16 | 21 | AAY76868 | н |
| 12 | 80 | • | 19 | 22 | AAB35632 | Ω, |
| 13 | 80 | • | 25 | 20 | AAY07306 | Collagen assembly |
| 14 | 80 | • | 134 | 22 | ABU53024 | Human testes-deriv |
| 15 | 80 | | 144 | 22 | ABU53007 | Human testes deriv |
| 19 | 80 | 100.0 | 144 | 22 | ABU53008 | Human testes-deriv |
| 17 | 80 | 100.0 | 333 | 22 | AAE02713 | Recombinant human |
| 18 | 80 | 100.0 | 333 | 22 | AAB68067 | Amino acid sequenc |
| 19 | 08 | 100.0 | 416 | 22 | AAE02711 | alph |
| 20 | 80 | 100.0 | 416 | 22 | AAB68065 | Amino acid sequenc |
| 21 | 80 | 100.0 | 500 | 22 | AAE02708 | Human alphal (I) t |
| 22 | 80 | 100.0 | 500 | 22 | AAB68062 | |
| 23 | 80 | 100.0 | 510 | 22 | AAE02712 | Recombinant human |
| 24 | 08 | 100.0 | 510 | 22 | AAB68066 | Amino acid sequenc |
| 25 | 08 | 100.0 | 662 | 22 | AAE02718 | Human alphal (I) t |
| 26 | 08 | 100.0 | 662 | 22 | AAB68072 | Amino acid sequenc |
| 27 | 80 | 100.0 | 822 | 20 | AAY06240 | |
| 28 | 08 | 100.0 | 936 | 22 | AAB70107 | Gelatin protein. |
| 29 | 08 | 100.0 | 1057 | 21 | AAY84541 | |
| 30 | 08 | 100.0 | 1057 | 21 | AAY84544 | A human collagen 1 |
| 31 | 80 | 100.0 | 1058 | 21 | AAY84403 | Amino acid sequenc |
| 32 | 08 | 100.0 | 1107 | 17 | AAR89472 | Collagen/decorin(a |
| 33 | 08 | 100.0 | 1107 | 21 | AAY84540 | Amino acid sequenc |
| 34 | 08 | 100.0 | 1169 | 17 | AAR89469 | ~ |
| 35 | 08 | 100.0 | 1169 | 21 | AAY84537 | Amino acid sequenc |
| 36 | 08 | 100.0 | 1171 | 17 | AAR89470 | Collagen/TGF-beta- |
| 37 | 80 | 100.0 | 1171 | 21 | AAY84538 | A chimeric collage |
| 38 | 08 | 100.0 | 1341 | 16 | AAR71701 | al |
| 39 | 08 | | 1341 | 21 | AAY96122 | |
| 0 | 08 | | 1341 | 23 | ABB80733 | |
| 41 | 80 | | 1341 | 23 | ABB09625 | Amino acid sequenc |
| 42 | 80 | | 1341 | 23 | AAE16475 | Human collagen alp |
| 3 | 08 | | 1388 | 17 | AAR89471 | Collagen/decorin f |
| 44 | 80 | 100.0 | 1388 | 21 | AAY84539 | Amino acid sequenc |
| 5 | 08 | 100.0 | 1411 | 21 | AAY56800 | Human preproalpha |
| | | | | | | |
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ALIGNMENTS

AAR11114 standard; peptide;

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| PS | X P X | DR. | Y PI | PA | PR | y P | YY PD | X PN | XX SO | X K W | X D | X D D | XX AC |
|----------------------------------|--|----------------------|---------------|--------------------------|----------------------------|----------------------------|--------------|--------------|------------|---|----------------------------|--|-----------|
| Claim 1; page 16; 20pp; English. | Synthetic peptide(s) analogous to collagen - promote cell adhesion | WPI; 1991-087110/12. | Bhatnagar BS; | (REGC) UNIV CALIFORNIA. | 14-AUG-1989; 89US-0393621. | 13-AUG-1990; 90WO-US04538. | 07-MAR-1991. | W09102537-A. | synthetic. | Collagen alpha-1 chain; cell adhesion; vertebrates. | Collagen peptide analogue. | 25-MAR-2003 (updated) 17-MAY-1991 (first entry) | AAR11114; |

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RESULT 2

AAR384 6

ID AAR38

XX

AC AAR38

AC Seque

DE Alpha

XX Synth

XX Synth

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XX 09-DE

XX 09-DE

XX 09-DE

XX 09-DE

XX D1scl

XX Synth

PT compc

PT repai

XX Synth

PT compc

PT repai

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                                                                                                                     generally observed in the rest of the collagen molecule. AAR38477-82 is a family of synthetic peptide fragments of P-15. They mimic the cellb binding domain of collagen. The domain includes a core sequence that, at physiologic conditions, is folded in a beta-bend formed at the I1a-Ala.

(Updated on 25-MAR-2003 to correct PN field.)
                                                                                                                                                                                                                                           The P-15 peptide spans approx. residues 766-780 of the alpha-1(I) chain of collagen. The P-15 region does not occur as a natural fragment of collagen nor is it a product of natural enzymatic cleavage. The P-15 region represent half of one turn of the collagen triple helix. The sequence contd. in P-15 can acquire a conformation dramatically different from the triple helical conformation.
                                                                                                                                                                                                                                                                                                                                                                                                                                        Synthetic peptide mimicking collagen binding to cells - used composite with bio-material matrix for soft and hard tissue repair or reconstruction
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This peptide corresps. to a region of the alpha-1 chain of collagen. It is useful in a compan. for promoting vertebrate cell (esp. fibroblast) adhesion to a substrate. It is free from natural folding, glycosylation, cross-linking, hydroxylation and association with other peptide chains.

(Updated on 25-MAR-2003 to correct PA field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence of peptide P-15 which spans approx. residues 766-780 of the alpha-1(I) chain of collagen.
                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Table 1, page 9; 26pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 1993-213814/26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (REGC ) UNIV CALIFORNIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-DEC-1991;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Synthetic peptide; alpha-1(I) chain; collagen; binding; P-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25-MAR-2003
02-DEC-1993
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAR38476 standard; peptide;
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(first entry)
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                   25-MAR-2003
05-JAN-1998
                                                                                                                     AAW18825 standard; peptide;
                                                                               AAW18825;
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RESULT(3
AAW27491
                                                                              Query Match
Best Local S
Matches 15
                                                                                                                                                                                                                      The present peptide sequence corresponds to a region of the alphal(I) chain of collagen which is sometimes referred to as "P=15". It can be used as a cell binding peptide in a new packing material, which is useful for cell culture in a bioreactor. The material comprises a matrix formed of a biomaterial, i.e. a material that is biologically compatible for in vivo applications and for cell culture in vitro, and the cell binding peptide. A bioreactor containing the packing material can be used to culture cells, e.g. mammalian cells for the production of monoclonal antibodies. The peptides are more effective than collagen in promoting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cell binding
                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 1; Col 18; 13pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bioreactor packing material for cell culture - comprising matrix coated with cell binding peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US5674848-A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bioreactor; packing material; cell binding peptide; matrix.
                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1997-502373/46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bhatnagar RS
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09-DEC-1991;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20-APR-1998
                                                                                                                                                                                                       attachment
                                                                                l Similarity
15; Conserv
                         GTPGPQGIAGQRGVV 15
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GTPGPQGIAGQRGVV
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                                                                            100.0%;
milarity 100.0%;
Conservative 0
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91US-0804782
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              peptide;
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                                                                                                   Score 80;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cell culture; collagen alphal(I) chain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ā
                                                                                  Mismatches
                                                                                                   6.9e-05;
                                                                                                                        DB
                                                                                                                           18;
                                                                                                                        Length 15;
                                                                                  Indels
                                                                                  0,
                                                                                  Gaps
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(updated)
(first entry)

15

B

Collagen binding peptide mimic

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RESULT 5
AAY299
AAY299
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AC AAY29
AC AAY29
AC COllae
XX
COllae
XX
COllae
XW
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Best Local S
Matches 15
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14-AUG-1989;
09-DEC-1991;
                                                                                                                                                                                                                                     Collagen; cell binding domain; biomaterial; soft tissue repair; hard tissue repair; reconstruction; cell surface receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New implants comprise a biomaterial matrix and a peptide carried by the matrix where the peptide has enhanced cell binding with respect to collagen and has a domain that mimics collagen binding to cells, the domain including at least -Ile-Ala- folded in a beta-bend at physiological conditions. The peptide is one of AAW18825-34 or one of 3 tripeptides (NAC-Ile-Ala-Ala; Ile-Ala-beta Ala; and NAC-Ile-Ala-N-Me). The implant is used as a substrate for growing cells, e.g. for use in reconstructive surgery, e.g. for bone of ligament repair or as tooth implants. The peptide promotes cell attachment to the matrix and also cell migration into the matrix here the matrix is porous.
                                                                                                                                                            Synthetic
                                                                                                                                                                                                                                                                                                               Collagen cell binding domain mimotope #1.
                                                                                                                                                                                                                                                                                                                                                                            02-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   03-JUN-1997
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  20-MAY-1997;
                                                      28-SEP-1999
                                                                                                                                                                                                             hard tissue repair; fibronectin; beta-be
                                                                                                                                                                                                                                                                                                                                                                                                                             AAY29991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY29991 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               promoting cell attachment
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beta-bend; fold; substrate; reconstructive surgery; bone; ligament;
                                                                                                  US5958428-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Implant bearing cell-binding collagen-mimetic peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22-JUL-1994;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (Updated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     355635482-A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l Similarity
15; Conser
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25-MAR-2003 to correct PF field.)
                                                                                                                                                                                                                beta-bend;
                                                                                                                                                                                                                                                                                                                                                                      (first entry)
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89US-0393621.
91US-0804782.
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  97US-0859610.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                              peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%;
                                                                                                                                                                                                             cartilage; tendon; ligament;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 80;
Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 18;
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                                                                                                                                                                                                                bone
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RESULT 6
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Best Local S
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14-AUG-1989;
09-DEC-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present invention describes synthetic peptide additives (SPAs) with enhanced collagen binding affinities. AAY39991 to AAY30000 represent specifically claimed examples of the SPA's. The additives comprise domains that mimic the binding sites of collagen to cells (but with higher affinity) and promote cell attachment when the additives are carried on repair or reconstructive apparatus. The SPA may be used in the construction of apparatus for soft tissue, cartilage, tendon, ligament and bone repair. The SPA may be used in the construction of apparatus for soft tissue, cartilage, tendon, and the construction of apparatus for soft tissue, cartilage, tendon, the construction of apparatus for soft tissue, cartilage, tendon, and the construction of apparatus for soft tissue, cartilage, tendon, and the construction of apparatus for soft tissue, cartilage, tendon, and the construction of apparatus for soft tissue, cartilage, tendon, and the construction of apparatus for soft tissue, cartilage, tendon, and the construction of apparatus for soft tissue, cartilage, tendon, and the construction of apparatus for soft tissue, cartilage, tendon, and the construction of apparatus for soft tissue, cartilage, tendon, and the construction of apparatus for soft tissue, cartilage, tendon, and the construction of apparatus for soft tissue, cartilage, tendon, and the construction of apparatus for soft tissue, cartilage, tendon, and the construction of apparatus for soft tissue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Synthetic peptide additives with enhanced collagen binding affinities useful for the production of apparatus for soft tissue, cartilage and bone repair {\boldsymbol{\cdot}}
                                                                                                                 AAY29587 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the construction of apparatus for soft
ligament and bose repair. The SEA mimic
cells to the tissue repair apparatus
                                                                   AAY29587;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 3; Column 25; 16pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bhatnagar RS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (REGC ) UNIV
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15; Conserv
                                                                                                                                                                                                                                                                                       1 GTPGPQGIAGQRGVV
                                                                                                                                                                                                                                       GTPGPQGIAGQRGVV 15
                                                                                                                                                                                                                                                                                                                                                                                                                                  15 AA;
                                                                                                                                                                                                                                                                                                                                       Conservative
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89US-0393621.
91US-0804782.
                                                                                                              peptide;
                                                                                                                                                                                                                                                                                                                                                           100.0%;
                                                                                                                                                                                                                                                                                     15
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                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                           Score 80;
Pred. No.
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                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                           DB 20;
6.9e-05;
                                                                                                                                                                                                                                                                                                                                                                                  Length 15
                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                       Gaps
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W09933447-A2
                                                                                                                                                                                       Collagen; fibronectin binding region; tissue reguinternal wound site; biodegradable microparticle
                                                                                                                                                                                                                  Collagen fibronectin binding region oligopeptide
                                                                        Yannas
                                                                                        (MASI ) MASSACHUSETTS INST TECHNOLOGY
                                                                                                         30-DEC-1997;
                                                                                                                         24-DEC-1998;
                                                                                                                                          08-JUL-1999.
                                                                                                                                                                           Unidentified
                                                                                                                                                                                                                                     18-OCT-1999
                                                                                                                                                                                                   fibronectin binding region; tissue regeneration;
                                                                                                                                                                                                                                   (first entry)
                                                                                                         97US-0000638
                                                                                                                          98WO-US27596
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implant;

Disclosure; Page 8;

25pp; English

wound

site

WPI; 1999-493795/41

The present invention describes a porous biodegradable microparticle (I)

Biodegradable microparticles for tissue regeneration at an internal

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cc weight of (I) is biodegraded at the wound site during the time period correquired for a wound of about the same severity, size and tissue type to complete about one half of the contraction which normally takes place in cc the absence of (I); and (I) comprises: (I) a three dimensional network (C of polymers which is substantially insoluble under physiological conditions; and (ii) one or more specific cell-binding fragments.

CC Methods using (I) may be used to treat internal injuries caused to contraction contraction of a wound site (accidentally or surgically induced) on an contraction methods greatly improve the clinical outcomes of patients could niternal organ from inducing contraction at the lesion site. The tissue could niternal organ and tissue injuries. The present sequence represents could be contracted and tissue injuries. The present is used in as collagen fibronectin binding region oligopeptide which is used in as contraction at the clinical outcomes of patients call the contraction and tissue injuries. The present sequence represents a collagen fibronectin binding region oligopeptide which is used in as contraction at the contraction which is included the contraction of the co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
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                                                                                                                                                                                                                                                                                                                                                                                       22-JUL-1994;
20-MAY-1997;
14-AUG-1989;
09-DEC-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cell binding; collagen; cell migration; collagen receptor; tissue repair; metalloproteinase; prolyl hydroxylase; tissue reconstruction; arthritis; bone repair; tooth implant; ligament repair; scar tissue; osteoporosis; bone disease; cartilage repair; joint disease; tendon repair.
                                                                                                                                                                                                                                                                                                                             (REGC ) UNIV CALIFORNIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        08-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31-JUL-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US6268348-B1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Synthetic peptide mimicking cell binding domain of collagen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAG67402;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in a 3-dimensional network of the regeneration template from the present
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                                                                                                                                                                                                              2001-540321/60
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
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97US-0859610.
89US-0393621.
91US-0804782.
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Pred. No. 6.9e-05;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
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The present sequence represents a synthetic peptide, which mimics the

collagen binding synthetic peptide useful for soft and hard tissue

a family of amino acid

sequence

being dislodged during deployment by the delivery apparatus. Tapparatus is used for treating occlusions or partial occlusion blood vessels, particularly saphenous vein grafts. The present sequence represents a portion of an al chain of collagen, whic given in the exemplification of the present invention.

occlusions

Claim 1; Column 25; 16pp; English repair e.g. bone repairs comprises B Q

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RESULT(8)
X O X W X E X T X X X
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Best Local S
Matches 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cell binding domain of collagen. The cell binding ability of the peptide is enhanced with respect to collagen. The peptide promotes cell migration into porous lattrices; binds to collagen receptors; induces metalloproteinases; can down regulate prolyl hydroxylase and collagen; inhibits cell binding to collagen or inhibits cell migration in vitro. The peptide is used for soft and hard tissue repair or reconstruction, e.g.—bone—respair, tooth implants and Tigament repair; for in vitro uses; as an inhibitor of collagen synthesis to block formation of scar tissue and thus promotes scarless healing; as bone filling/fusion for osteroproxis and other bone diseases, cartilage, repair for arthritis and other joint disease and tendon repair; for soft tissue repair of a collagen synthesis to block formation of scar tissue and thus promotes scarless healing; as bone filling/fusion for other joint disease and tendon repair; for soft tissue repair e.g. nerve, organ, skin, vascular, muscle and ophthalmic applications.
                                                                                coating disposed on the inner and outer surfaces of the polymer sleeve for enhancing endothelial cell growth on the polymer sleeve. Also described is delivery apparatus for an expandable device comprising a shaft, and a balloon mounted on the shaft, where the shaft has a lumen for inflating and deflating the balloon. The balloon is formed with intermediate portions adapted to receive the expandable device, and radiopaque markers carried within the balloon and sized to prevent from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-AUG-1999;
                                                                                                                                                                                                             delivery into a blood vessel comprising an expandable support frame, and a mimpervious polymer sleeve extending over the support frame, and a
                                                                                                                                                                                                                                                 The present invention describes a composite expandable device
                                                                                                                                                                                                                                                                                   Disclosure; Page 4; 10pp;
                                                                                                                                                                                                                                                                                                                                       Composite expandable device for treating occlusions in blood vessels, e.g., saphenous vein grafts, comprises polymeric covering and bioacti
                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2002-582305/62
                                                                                                                                                                                                                                                                                                                                                                                                                                 Rudakov LV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US2002062145-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Delivery; blood; collagen; occlusion; blood vessel; saphenous vein graft
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           08-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                (CARD:) CARDIOVASC INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22-AUG-2001; 2001US-0935417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Portion of an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABP51951;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABP51951 standard; peptide; 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
nes 15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTPGPQGIAGQRGVV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                               Imran MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99US-0385691.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       al chain or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ΑA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                               Dinh
                                                                                                                                                                                                                                                                                    English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       collagen peptide sequence SEQ ID NO:1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
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Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                               Davidian A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 22;
6.9e-05;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                         and bioactive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
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RESULT (2)
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                                                                                                                                     The invention relates to a bone repair apparatus that is prepared by CC growing harvested fibroblasts under cell growth conditions to form CC cultured tissue cells, seeding at least some of the cultured tissue cells on a biologically compatible structure having a collagen minic, and cincubating the seeded cells under cell growth conditions, where the CC seeded cells differentiate into an osteogenic phenotype. Methods of the cincubation are useful for preparing bone repair apparatus for use as a CC bone graft. The fibroblast cells from the recipient can be easily contrast to a converted with minimal invasion and trauma to the patient. By contrast to converted with minimal invasion and trauma to obtain living bone CC other methods, the fibroblast is plentiful and easily obtained with CC minimal trauma and the inventive method is able to obtain living bone confirs. The easily harvested fibroblasts are converted to living bone CC like cells and they, together the biologically compatible CC structure, yield a tissue engineered bone graft. This can integrate with hosting viable cells because of disease or radiation therapy. The current converted to cells because of disease or radiation therapy. The current convertions are converted to a collage of disease or radiation therapy.
                Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
 Matches
                                                              Sequence
                                                                                            sequence represents a collagen cell binding domain mimic peptide P-15 This 15 amino acid peptide has the same sequence as a particular, sma region in the alphal(I) chain of collagen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Preparation of bone repair apparatus comprises seeding at least some of cultured tissue cells on biologically compatible structure having collagen mimic and incubating seeded cells under cell growth conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                          Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bhatnagar RS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-APR-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       radiation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Collagen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Collagen cell binding domain mimic peptide P-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABB10111;
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y Match 100.0%;
Local Similarity 100.0%;
hes 15; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2002-034479/04
                                                                                                                                                                                                                                                                                                                                                                                                                         7; Page
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15; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bone; repair;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      therapy; bone damage
                                                                15
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ilarity 100.0%;
Conservative (
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                A,
                                                                                                                                                                                                                                                                                                                                                                                                                         6;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qian JJ
                                                                                                                                                                                                                                                                                                                                                                                                                     23pp;
                                                                                                                                                                                                                                                                                                                                                                                                                         English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bone graft; tissue engineering; fibroblast,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 80;
Pred. No.
Score 80; DB 23;
Pred. No. 6.9e-05;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23;
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                                                                                                            as a particular, small
                            Length 15;
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 Indels
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0;
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Gaps
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RESULT 10
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                                                          SXCCCCCCCCCCCCXXXXIII
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Query Match
Best Local Similarity
Matches 15; Conser
                                                                                                                                             where AA5 is Glu, Ser, Asp or Asn; AA4 is Leu or Ser, AA3 is Leu, Ile, Phe or Gly; AA2 is Asp, Leu, Asn or Ser; AA1 is Gly, Pro or Asp; AAX is any amino acid and n = 0 or 1 are claimed; AA5 or AA5-AA4 may be absent. When two or more such peptides are attached to a carrier, the product can be used for stimulating adhesion of eukaryotic cells in vitro. Particular applications include coating synthetic blood vessels with endothelial cells, preparing skin grafts using epithelial cells or stimulating wound healing. When a single peptide is used it may inhibit intercellular adhesion, making it useful for preventing thrombosis or arteriosclerosis or to suppress cancer metastases. The peptides can also be used as chemotactic attractors and for detecting/
                                                          Sequence
                                                                                                       quantifying cell-cell adhesion in vitro.
The present sequence is a fragment of the alpha-1 chain of collagen which was used as a positive control in a cell adhesion assay on the
                                                                                                                                                                                                                                                                                                                  Peptides contg. the highly generic sequence AA5-AA4-AA3-AA2-AA1-(AAX)n
                                                                                                                                                                                                                                                                                                                                                Example 1; Page 7; 18pp; German
                                                                                                                                                                                                                                                                                                                                                                                           prepare,
                                                                                                                                                                                                                                                                                                                                                                                                         Peptide(s) that stimulate or inhibit cell to cell adhesion e.g. to coat synthetic blood vessels with endothelial cells,
                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1996-130242/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Doerschner A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22-AUG-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           synthetic blood vessel; coating; endothelial cell; epidermal cell; chemotactic attractor; wound healing; organ transplantation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Collagen fragment P-15 as positive control for cell adhesion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      03-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR92859;
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                                                                                         novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (BEIE ) BEIERSDORF AG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22-AUG-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DE4430601-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              thrombosis; arteriosclerosis; cancer metastases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Intercellular adhesion;
                                                                                        peptides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GTPGPQGIAGQRGVV
                                                                                                                                                                                                                                                                                                                                                                                           or increase growth of skin grafts,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTPGPQGIAGQRGVV
                                                           16
 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                           AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eichner W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94DE-4430601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94DE-4430601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              peptide;
            100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "C-terminal Cys residue for attachir peptide to a carrier protein, e.g.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          stimulation; inhibition; skin graft;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15
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0;
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Score 80; DE
Pred. No. 7.3
0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cys residue for attaching
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mielke
           DB 17;
7.3e-05;
                                                                                                                                                                                                                                                                                                                                                                                           to prevent thrombosis
 0;
                          Length
 Indels
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Gaps
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Qγ

GTPGPQGIAGQRGVV 15

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RESULT 11
AAY7686
XX
AC AAY768

RESULT (2)
AAB35632
ID AAB356
XX
AC AAB356
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                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This sequence represents a collagen receptor agonist that can be used in the pharmaceutical composition of the invention. The composition comprises a transforming growth factor-beta [TGF-beta] mimic peptide and a physiologically acceptable carrier. The compositions can be used in cancer therapy, particularly as adjuncts to chemotherapy or radiation therapy. They can also be used in treating arteriosclerosis, since the plaques formed within the lumen of blood vessels have been shown to have angiogenic stimulatory activity. The peptides can also by used: in surgery as agents which promote wound healing and regeneration; in orthopaedics in promoting bone repair and implant—integration; in dentistiy in the repair of bony defects and implant—the treatment of the company of the composition in the treatment of the company of the composition in 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        orthopaedics in promoting bone repair and implant integration dentistry in the repair of bony defects and in implant integrate treatment of rheumatoid arthritis; in ophthalmology for the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Transforming growth factor-beta; TGF-beta; mimic; cancer; therapy; chemotherapy; radiation therapy; arteriosclerosis; implant integration; wound healing promoter; regeneration; bone repair; rheumatoid arthritis; uveitis; splanchnic artery occlusion reperfusion injury;
   AAB35632;
                                                                  AAB35632 standard; Peptide; 19 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       factors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 reperfusion injury;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          uveitis; as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 14; Page 28; 36pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New therapeutic composition comprising TGF-beta mimic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bhatnagar RS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (REGC ) UNIV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       08-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20-JAN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200002916-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                collagen receptor agonist.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Collagen receptor agonist
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY76868;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY76868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000-171133/15
                                                                                                                                                                                                                                                                                                                                                                                                    . Similarity
15; Conserv
                                                                                                                                                                                                                                                                                                                      GTPGPQGIAGQRGVV 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rpgpQGIAGQRGVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a protective agent for splanchnic artery occlusion
                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qian JJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0113696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-US15432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and as
                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gough C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 reagents
                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16
                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 80;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A
                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for research
                                                                                                                                                                                                                                                                                                                                                                                                                          DB 21;
7.3e-05;
                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 16;
                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the biology of growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           used
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                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   treatment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cancer
                                                                                                                                                                                                                                                                                                                                                                                         Gaps
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RESULT 13
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Best Local S
Matches 15
                                                                                                                                                                                                                                                                                                                                                                                                  The present invention relates to detecting cartilage degradation in a biological sample by identifying the presence of unwound type II collagen in the sample. The method involves contacting the sample with a monoclonal antibody which only binds an epitope on unwound type II collagen chains. The invention is useful for the early detection of arthritis and joint damage and for monitoring disease related to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or joint damage by contactin
that binds to an epitope of
a native helical collagen -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Detecting cartilage degradation useful for early detection of arthrition or joint damage by contacting the biological sample with an antibody that binds to an epitope of unwound type II collagen chains but not to
                                                                                               Synthetic.
Homo sapiens
                                                                                                                                                      Collagen assembly inhibitor peptide F6
                                                                                                                                                                            06-JUL-1999
                                                                                                                                                                                                                        AAY07306 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-006136/01.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Billinghurst RC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              04-DEC-1992;
17-JUL-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Type II collagen; arthritis; joint; ds.
          10-SEP-1997;
                                                      18-MAR-1999
                                                                           WO9912558-A1
                                                                                                                                Human; collagen;
                                                                                                                                                                                                   AAY07306;
                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                         collagen
                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention relates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (SHRI-) SHRINERS HOSPITALS FOR CHILDREN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22-JAN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17-OCT-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Collagenase cleavage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-FEB-2001
                               10-SEP-1998;
                                                                                                                                                                                                                                                                                                                          l Similarity
15; Conserv
                                                                                                                                                                                                                                                                               4 GTPGPQGIAGQRGVV
                                                                                                                                                                                                                                                                                            1 GTPGPQGIAGQRGVV 15
                                                                                                                                                                                                                                                                                                                                                                     19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fig 15; 58pp; English.
                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                     A
A
          97US-0058353
                                98WO-US18838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            92US-0984123
95US-0448501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98US-0010999
                                                                                                                                 assembly;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Poole
                                                                                                                                                                                                                                                                                                                                   100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AR,
                                                                                                                                 inhibitor
                                                                                                                                                                                                                         25
                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                    Score 80;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hollander AP
                                                                                                                                                                                                                         AA
                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                         DB 22;
. 8.6e-05;
ches 0;
                                                                                                                                                                                                                                                                                                                                             Length 19
                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of arthritis
                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                           Gaps
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0;

Fertala A,

Prockop

(UYAL-)

UNIV ALLEGHENY HEALTH

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RESULT 44
ABU5302
ABU5302
XX
ABU5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 15
                                                  them may be used in the prevention, diagnosis and treatment of diseases associated with inappropriate polypeptide expression. The products of the invention may also be used to identify modulators of expression and activity and to down regulate expression and activity. The antibodies of the invention may also be used as diagnostic agents for detecting the presence of polypeptides in samples. This sequence represents a homologue of a polypeptide described in the disclosure of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This sequence corresponds to residues 761-785 of the alphal chain of human type I collagen. The invention relates to the use of the collagen to isolate type I collagen assembly-inhibiting peptides, e.g. see AAY07304-Y07326.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI;
Sequence
                                                                                                                                                                                                                                                                                                                                                                     Example III; Page 637; 1095pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                          Nucleic acids having the sequences of clones isolated from libraries different human tissues, useful in recombinant DNA methodologies -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wiemann S;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18-AUG-1999;
28-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18-AUG-2000; 2000WO-IB01496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200112659-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; gene therapy; vaccine; disease treatment; detection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human testes-derived DKFZphtes3_18f3 homologue #20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABU53024;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABU53024 standard; Protein; 134 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Page 23; 57pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel inhibitors of collagen assembly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22-FEB-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14-APR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GEHU-) GERMAN HUMAN GENOME PROJECT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity 100 tes 15; Conservative
                                                                                                                                                                                                                                                      invention describes novel polynucleotides and polypeptides human cDNA libraries which can be used for gene therapy or lnes. The polynucleotides of the invention and antibodies en
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2001-327840/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTPGPQGIAGQRGVV 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTPGPQGIAGQRGVV 15
  134 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99US-0149499
99US-0156503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 80;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 20;
0.00011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
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                                                                                                                                                                                              d antibodies encoded by treatment of diseases lon. The products of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25;
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Search completed: August 29, Job time : 84 secs

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RESULT (15)
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                                                       Query Match
Best Local S
                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                             This invention describes <u>novel polynucleotides</u> and polypeptides—isolated from human cDNA libraries which can be used_for_gene_therapy or in vaccines. The polynucleotides of the invention and antibodies encoded by them may be used in the prevention, diagnosis and treatment of diseases associated with inappropriate polypeptide expression. The products of the invention may also be used to identify modulators of expression and activity and to down regulate expression and activity. The antibodies of the invention may also be used as <u>diagnostic</u> agents for detecting the presence of <u>polypeptides</u> in samples. This sequence represents a homologue of a polypeptide described in the disclosure of the invention.
                                                                                           Sequence
                                                                                                                                                                                                                                           Example III; Page 634; 1095pp; English.
                                                                                                                                                                                                                                                                  Nucleic acids having the sequences different human tissues, useful in
                                                                                                                                                                                                                                                                                                    WPI; 2001-327840/34
                                                                                                                                                                                                                                                                                                                            Wiemann
                                                                                                                                                                                                                                                                                                                                                                       18-AUG-1999;
28-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                          18-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200112659-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human testes-derived DKFZphtes3_18f3 homologue #3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14-APR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABU53007;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABU53007 standard;
                                                                                                                                                                                                                                                                                                                                                 (GEHU-) GERMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25
15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15;
                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTPGPQGIAGQRGVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTPGPQGIAGQRGVV
                                                                                           144 AA;
                                               Conservative
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99US-0156503
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Pred. No.
                                             Score 80; DE Pred. No. 0.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    disease treatment;
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                                                                                                                                                                                                                                                                              of clones isolated from libraries
                                                                                                                                                                                                                                                                  recombinant DNA methodologies
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0.00055;
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0.00059;
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Query Match
Best Local Similarity
Thes 12; Conserve
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                                                                         IMMEDIATE SOURCE:
CLONE: COLLAGEN -ALPHA 1 (II)
US-08-963-825-20
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US-08-963-825-20
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Best Local Similarity 80.0
Matches 12; Conservative
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TELEX: 236687
INFORMATION FOR SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Ovist, Per APPLICANT: Bonde, Martin TITLE OF INVENTION: A Method TITLE OF INVENTION: Method TITLE OF INVENTION: Disord
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                                                                                                                                                                                                                                                                                                                                               FILING DATE:
CLASSIFICATION: 436
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/187,319
FILING DATE: 21-JAN-1994
ATTORNEY/AGENT INFORMATION:
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                                                                                                                                     MOLECULE TYPE:
ORIGINAL SOURCE:
                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 1418 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION: TELEPHONE: 212-527-7700
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                        ORGANISM:
                                                                                                                                                                   TYPE: amino acid TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                      REGISTRATION NUMBER: 29
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
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5. 6110689
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                 Conservative
                                                                                                                     Homo sapiens
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in Body Fluids, A Test Kit and Means for
Method and Use of the Method to Diagnose
Disorders Associated with the Metabolism
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                             Score 71; DB 3; Pred. No. 0.023;
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               Indels
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Search completed: August 29, 2003, 18:30:11 Job time: 30 secs
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US-09-010-999-1
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                                                                                                                                                                                                                                                                                                                                                TELEX: 904136
INFORMATION FOR SEQ ID NO:
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                 MOLECULE TYPE:
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                REGISTRATION NUMBER: 29,768
REFERENCE/DOCKET NUMBER: 03
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)672-5300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US 07/984,123
FILING DATE: 04-DEC-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Poole, Anthony R.
APPLICANT: Hollander, Anthony P.
APPLICANT: Billinghurst, R. C.
                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
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PRIOR APPLICATION DATA:
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TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                 TOPOLOGY:
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                                                                                                                                                                                                                                                                               STRANDEDNESS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: Bent, Stephen A. REGISTRATION NUMBER: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US 0: FILING DATE: 17-JUL-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
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                                                                                                                                                                                                                                                                                                              LENGTH:
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                                                               900 GPPGPQGLAGQRGIV 914
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                                                                                               1 GTPGPQGIAGQRGVV 15
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                                                                                                                                Conservative
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                                                                                                                                                                                                                Human Type II Collagen
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                                                                                                                                                                                                                                               protein
                                                                                                                                                 88.8%;
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                                                                                                                                                 Score 71; DB 3; Pred. No. 0.023;
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Patent No. 64137
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                                           APPLICANT: Chang, Robert
APPLICANT: McMullin, Hugh
APPLICANT: Hitzeman, Ronald A.
APPLICANT: Hitzeman, Ronald A.
APPLICANT: Chisholm, George
TITLE OF INVENTION: NOVEL METHODS FOR THE PRODUCTION OF GELATIN AND
TITLE OF INVENTION: CFULL-LENGTH TRIPLE HELICAL COLLAGEN IN RECOMBIN
TITLE OF INVENTION: CFULLS
TILE REFERENCE: 225002030400
CURRENT APPLICATION NUMBER: US/09/585,887
CURRENT FILING DATE: 2000-05-31
PRIOR APPLICATION NUMBER: 09/289,578
PRIOR APPLICATION NUMBER: 60/084,828
PRIOR APPLICATION NUMBER: 60/084,828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
              PRIOR FILING DATE: 1998-05-08 NUMBER OF SEQ ID NOS: 11
                                                                                                                                                                                                                                                                             APPLICANT: Olsen, David R
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 1341 amino acids
TYPE: amino acid
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CLONE: COLLAGEN ALPHA 1 (I)
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ORIGINAL SOURCE:
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ATTORNEY/AGENT INFORMATION:
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REGISTRATION NUMBER: 29
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
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PatentIn Ver.
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RESULT 13
US-08-931-820-3
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US-09-289-578-9
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                                                                                                                                                                                                                                                                                                               Sequence 3, Application Patent No. 6010863
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Sequence 9, Appr-
No. 6428978
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APPLICANT:
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                                       FILING DATE:
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: 60/084,828 PRIOR FILING DATE: 1998-05-08 NUMBER OF SEQ ID NOS: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/09/289,578 CURRENT FILING DATE: 1999-04-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: NOVEL METHODS FOR THE PRODUCTION OF GELATIN AND TITLE OF INVENTION: FULL-LENGTH TRIPLE HELICAL COLLAGEN IN RECOMBINANT TITLE OF INVENTION: CELLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Olsen, David
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILE REFERENCE: 225002030400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Ver. 2.0
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TYPE: PRT
ORGANISM: Homo sapiens
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                                                                                                                                                     COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
                                                                       CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                          SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                  TITLE OF INVENTION:
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                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity hes 15; Conserv
                                                                                                                         APPLICATION NUMBER: US/08/931,820 FILING DATE:
             LENGTH:
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15; Conserv
: 1060 amino acids amino acid
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McMullin, Hugh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Application US/09289578
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Pred. No.
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Patent No. 6323314
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Best Local Similarity
Matches 15; Conserv
                                  Matches
                                                               Query Match
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                                                                                                                                                                                                                                                 TELEFAX: 212-753-6237
TELEX: 236687
INFORMATION FOR SEQ ID NO:
                                                                                                                       ORIGINAL SOURCE:
ORGANISM: Homo
IMMEDIATE SOURCE:
                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 1341 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: A Method for Assaying Collagen Fragments
TITLE OF INVENTION: in Body Fluids, A Test Kit and Means for Carrying Out
TITLE OF INVENTION: Method and Use of the Method to Diagnose the Presence
TITLE OF INVENTION: Disorders Associated with the Metabolism of
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CLONE: COLLAGE
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ORIGINAL SOURCE:
                                                                                                                                                                           MOLECULE TYPE:
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TELEPHONE: 212-527-7700
TELEFAX: 212-753-6237
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APPLICATION NUMBER:
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STATE: New York
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                                                                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER: 4305/08701
                                                                                                                                                                                                                                                                                                                                                      NAME: Gogoris, Adda C
REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
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15; Conserv
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GTPGPQGIAGQRGVV 15
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                                 Conservative
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Bonde, Martin
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                                                                                                                                             Homo sapiens
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IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
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Pred. No. 0.0011;
Mismatches 0
                                              Score 80; DB 4;
Pred. No. 0.0011;
                                 Mismatches
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                                                               DB 4; Length 1341;
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Sequence 18, Application US/09;
Patent No. 6355442;
GENERAL INFORMATION:
APPLICANT: Qvist, Per
APPLICANT: Bonde, Martin
FITLE OF INVENTION: A Method
FITLE OF INVENTION: Method
                                                                                                                                            RESULT 10
US-09-548-608-18
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TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
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SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
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ORIGINAL SOURCE:
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TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-527-7700
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NAME: Gogoris, Adda C
REGISTRATION NUMBER: 29,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA: APPLICATION NUMBER:
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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TELEX: 236687
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STATE: New York
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"n. 634236)
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A Method for Assaying Collagen Fragments
in Body Fluids, A Test Kit and Means for Carrying Out
Method and Use of the Method to Diagnose the Presence
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in Body Fluids, A Test Kit and Means for Carrying Out
Method and Use of the Method to Diagnose the Presence
Disorders Associated with the Metabolism of
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                                                                                                                                                                                                                                                                                                   Score 80; DB 4;
Pred. No. 0.0011;
                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                   Length 1341;
                                                                                                                                                                                                                                                                                    Indels
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EARLIER FILING DATE: 1998-09-10

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                                                                                                                                                                                                 RESULT 6
US-08-931-820-1
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OTHER INFORMATION: Description of Artificial Sequence: Synthetic
OTHER INFORMATION: amino acid sequence
US-09-219-849-49
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                                                                                                                                          Sequence 1, Application US/08931820 Patent No. 6010863 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION NUMBER: US/09/219,849
CURRENT FILING DATE: 1998-12-23
NUMBER OF SEQ ID NOS: 50
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 49
                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                Matches
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LENGTH: 25
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APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: WIND, RICHELE D.
APPLICANT: VAN DEN BOSCH, TANJA J.
TITLE OF INVENTION: SILVER HALIDE ENULSIONS WITH RECOMBINANT COLLAGEN
TITLE OF INVENTION: SUITABLE FOR PHOTOGRAPHIC APPLICATION AND ALSO THE
TITLE OF INVENTION: PREPARATION THEREOF
FILE REFERENCE: 2728-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 23
SOFTWARE: PatentIn Ver. 2.1
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TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Artificial Sequence
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                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                              NUMBER OF SEQUENCES:
                                                                                                             TITLE OF INVENTION:
CURRENT APPLICATION DATA:
                       MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
             SOFTWARE:
                                                                                                                                                                                                                                                                768 GTPGPQGIAGQRGVV 782
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15; Conserv
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VAN RIJN, ALEXIS C.
BOUWSTRA, JAN B.
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WERTEN, MARC W.T.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DE WOLF, FREDERIK A.
                                                                                                                                                                                                                                                                                                                                 Conservative
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           PatentIn Release #1.0, Version #1.25 (EPO)
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                                                                                                           Assay for collagen degradation
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Pred. No.
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Pred. No. 0.00069;
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US-08-963-825-18
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GENERAL I
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Best Local (
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                             TELEX: 236687
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                 CLASSIFICATION: 436
PRIOR APPLICATION NUMBER: US/08,
APPLICATION NUMBER: US/08,
FILING DATE: 21-JAN 1994
ATTORNEY/AGENT INFORMATION:
NAME: Gogoris, Adda C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Qvist, Per
APPLICANT: Bonde, Martin
TITLE OF INVENTION: A Method for Assaying Collagen Fragments
TITLE OF INVENTION: in Body Fluids, A Test Kit and Means for Carrying Out the
TITLE OF INVENTION: Method and Use of the Method to Diagnose the Presence of
TITLE OF INVENTION: Disorders Associated with the Metabolism of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: pr
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PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                  TELEPHONE: 212-527-7700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
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LENGTH: 1057 amino acids
                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                              TELEFAX:
                                                                                                                                                 NAME: Gogoris, Adda C
REGISTRATION NUMBER: :
                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY: U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE TYPE: Collagen type
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: FILING DATE:
                                                                                                TELEPHONE:
                                                                                                                                     REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                      APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                         SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
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            ENGTH:
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1 Similarity 100.0%;
15; Conservation
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amino acid
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805 Third Avenue
               1341 amino acids
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                                                                                212-753-6237
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                                                                                                                                              29,714
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                                                                                                                                   4305/08701
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Pred. No. (
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Best Local Similarity
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                                                                                Query Match
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                                                                                                                                                                                          TELEFAX: 415-362-5418.
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 15 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Patentin Rel
CURRENT APPLICATION DATA:
                                                                                                                                      MOLECULE TYPE:
HYPOTHETICAL:
                                                                                                                                                                                                                                                    TELEPHONE: 415-248-5500
                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
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CLASSIFICATION: 435
PRIOR APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 22-JUL-1994 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: 1
                                                     Local Similarity
nes 15; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US 0 FILING DATE: 20-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OPERATING SYSTEM:
                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                           NAME: Siebert, J. Suzanne REGISTRATION NUMBER: 28,758
                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
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                         GTPGPQGIAGQRGVV 15
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bhatnagar,
                                                     Conservative
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IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
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                                                                                                                                                                   linear
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                                                              100.0%;
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                                                                 Score 80;
Pred. No.
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Pred. No. 1
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                                                                  .4e-05;
                                                                              Length 15;
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RESULT 4
US-09-517-866-3
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US-09-010-999-9
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Best Local S
Matches 15
                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                               Sequence 3, Application US/09517866 Patent No. 6472504
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                                     CURRENT APPLICATION NUMBER: US/09/517,866
CURRENT FILING DATE: 2000-03-03
                                                                     APPLICANT: PROCKOP, Darwin J.

APPLICANT: FERTALA, Andrzej
TITLE OF INVENTION: INHIBITORS OF COLLAGEN ASSEMBLY
FILE REFERENCE: 209598.0111/2801
FILE REFERENCE: 209598.0111/2801
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 19 amino acids
EARLIER APPLICATION NUMBER: 60/058,353 EARLIER FILING DATE: 1997-09-10
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MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Rel-Base #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: linear MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION: TELEPHONE: (202)672-5300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/448,501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: FILING DATE: 04-DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/0 FILING DATE: 22-JAN-1998 CLASSIFICATION: 4335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: Bent, Stephen A. REGISTRATION NUMBER: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
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15; Conserv
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3000 K Street, N.W., Suite 500
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Billinghurst, R. C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (202)672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Poole, Anthony R.
                                                                                                                                                                                                                                                                                                                                                                                  Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IMMUNOASSAYS FOR THE MEASUREMENT OF COLLAGEN DENATURATION AND CLEAVAGE IN CARTILAGE
                                                                                                                                                                                                                                                                                                                                                                              100.0%; Score 80; D
100.0%; Pred. No. 1.
Live 0; Mismatches
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Result
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Perfect score:
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Maximum DB seq length: 2000000000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence:
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                                                                                                                                                                                                                                                                                                                                                                                                           re greater than or equal to the score is derived by analysis of the total
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 100.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                August 29, 2003, 18:25:20; Search time 29 Seconds (without alignments)
21.885 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                             Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       328717 seqs, 42310858 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Maximum Match
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 1461
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        US-08-859-610A-1
US-09-3128-347A-1
US-09-3128-347A-1
US-09-311-999-9
US-09-517-866-3
US-09-517-866-3
US-09-517-866-3
US-08-931-820-1
US-08-931-820-1
US-09-585-887-9
US-09-585-887-9
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US-09-585-85-9
US-09-585-85-9
US-08-316-550-12
US-09-586-811-21
US-09-586-811-21
US-09-590-811-21
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    version 5.1.6 - 2003 Compugen Ltd.
                                                                                                                                                                                                       Sequence 1; Appli
Sequence 9; Appli
Sequence 9; Appli
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Sequence 49; Appli
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US-08-859-610A-1
US-0,8-859-610A-:
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                       HYPOTHETICAL:
                                 MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                               TOPOLOGY:
                                                                      LENGTH:
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| | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 3 5 | 34 | ω ω | 32 | 31 | 30 | 29 | 28 |
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| | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 |
| | 67.5 | 67.5 | 67.5 | 67.5 | 67.5 | 67.5 | 67.5 | 67.5 | 67.5 | 67.5 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 |
| | 829 | 829 | 417 | 417 | 417 | 417 | 417 | 417 | 279 | 228 | 1366 | 1366 | 1366 | 1366 | 1366 | 1366 | 1024 | 19 |
| | 1 | 1 | 4 | ω | N | ۳ | ب | Н | w | w | 4 | 4 | 4 | 4 | 4 | ω | w | w |
| ALIGNMENTS | US-08-397-633A-53 | US-08-642-255-132 | US-09-444-791A-104 | US-08-482-085B-104 | US-08-707-237A-76 | US-08-642-255-102 | US-08-477-509B-104 | US-08-175-155-69 | US-09-010-999-2 | US-09-219-849-38 | US-09-289-578-10 | US-09-585-887-10 | US-09-548-608-19 | US-09-570-573-19 | US-09-500-811-19 | US-08-963-825-19 | US-08-931-820-2 | US-09-010-999-10 |
| | Sequence 53, Appl | Sequence 132, App | Sequence 104, App | Sequence 104, App | Sequence 76, Appl | Sequence 102, App | Sequence 104, App | Sequence 69, Appl | Sequence 2, Appli | 38 | Sequence 10, Appl | Sequence 10, Appl | Sequence 19, Appl | Sequence 19, Appl | Sequence 19, Appl | Sequence 19, Appl | Sequence 2, Appli | Sequence 10, Appl |

Sequence 1, Application US/08859610A Patent No. 5958428 TELEFAX: 415-362-5418 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS GENERAL INFORMATION: REGISTRATION UMBER: 28,758 REFERENCE/DOCKET NUMBER: 25/ TELECOMMUNICATION INFORMATION: TELEPHONE: 415-248-5500 FILING DATE: 14-AUG-1989 ATTORNEY/AGENT INFORMATION: NAME: Siebert, J. Suzanne PRIOR APPLICATION DATA: APPLICATION NUMBER: US 07/804,782 FILING DATE: 09-DEC-1991 PRIOR APPLICATION DATA: APPLICATION NUMBER: US 07/393,621 APPLICATION NUMBER: US/08/859,610A FILING DATE: 20-MAY-1997 CLASSIFICATION: 435 PRIOR APPLICATION DATA: APPLICATION NUMBER: US 08/278,878 FILING DATE: 22-JUL-1994 CURRENT APPLICATION DATA: NUMBER OF SEQUENCES: 14 CORRESPONDENCE ADDRESS: ADDRESSEE: Majestic, Parsons, Siebert & Hsue P.C. STREET: Four Embarcadero Center, Suite 1100 TITLE OF INVENTION: COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release CITY: San Francisco STATE: California MEDIUM TYPE: Floppy 94111-4106 amino acid 15 amino acids U.S.A. Bhatnagar, Rajendra S. VENTION: SYNTHETIC COMPOUNDS AND COMPOSITIONS VENTION: WITH ENHANCED CELL BINDING Patentin Release #1.0, linear : protein Floppy disk ID NO: 2500.066US4 Version #1

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Result
No.
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Maximum DB seq length: 200000000
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Maximum Match 10
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Sequence:
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Gapop 10.0 , Gapext 0.5
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                                                                                                                                                                                                                                                                                      Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               510680 seqs, 136781880 residues
                                                                                                                                                                                                                                                                                                       Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Published_Applications_AA:*

1: /cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep:*

2: /cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep:*

3: /cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*

4: /cgn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep:*

5: /cgn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep:*
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Listing first 45 summaries
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
/cgn2_6/ptodata/2/pubpaa/USO9A_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                        /cgn2_6/ptodata/2/pubpaa/US09B_PUBCOMB.pep:*
/cgn2_6/ptodata/2/pubpaa/US09C_PUBCOMB.pep:*
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   US-10-133-289-1
US-10-176-401-1
US-10-177-193-1
US-10-279-991-3
US-10-058-124-18
US-10-060-036-159
US-10-060-036-159
US-10-171-311-36
US-10-149-352-2
US-10-149-352-2
                                                                                                                                                                                                            US-09-113-696B-17
US-09-816-737-1
US-09-935-417-1
                                                                                                                                                                                                                                                                                                                                        SUMMARIES
         Sequence 17, Appli
Sequence 1, Appli
Sequence 3, Appli
Sequence 28, Appli
Sequence 28, Appli
Sequence 215, Appli
Sequence 21, Appli
                                                                                                                                                                                                                                                                                Description
Sequence
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| 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | S G | 34 | 33 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 |
|--------------------|--------------------|------|----------|--------------------|-------------------|--------------------|-------------------|-------------------|------------------|-------------------|-------------------|-------------------|---------------------|-------------------|------------------|------------------|-------------------|-------------------|------------------|------------------|------------------|------------------|------|-------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 5 3 | 53 | 53 | 54 | 54 | 54 | 56 | 56 | 56 | 56 | 56 | 57 | 57 | 57 | 58 | 58 | 60 | 71 | 71 | 71 | 71 | 71 |
| 65.0 | 65.0 | | | | | | | | | | | | • | 70.0 | • | • | | | | | | | | | | | | 88.8 | |
| 520 | 520 | 520 | 520 | 520 | 520 | 520 | 403 | 742 | 680 | 61 | 837 | 417 | 33 | 1366 | 1366 | 1366 | 674 | 674 | 1466 | 1466 | 1078 | 1496 | 1496 | 459 | 1418 | 1014 | 1014 | 714 | 714 |
| 11 | 1 | 11 | 10 | 10 | 10 | | | | | | | | | 15 | 15 | 12 | 11 | 9 | 15 | 12 | 15 | 15 | 12 | 9 | 15 | 12 | 12 | 15 | 15 |
| US-09-978-585A-614 | US-09-978-608A-614 | -978 | -999-832 | US-09-978-192A-614 | US-09-978-697-614 | US-09-978-295A-614 | US-09-925-302-689 | US-10-203-860-4 | US-10-177-293-59 | US-10-096-986-102 | US-10-096-986-103 | us-10-096-986-104 | US-09-864-761-39163 | US-10-058-124-19 | US-10-171-311-38 | US-10-301-822-31 | US-09-925-299-979 | US-09-925-299-979 | US-10-177-293-68 | US-10-301-822-33 | US-10-058-124-21 | US-10-177-293-70 | 322- | US-09-789-561-97 | US-10-058-124-20 | US-10-194-441A-48 | -10 | -10- | US-10-233-885-44 |
| • | 614, | 614, | 614, | 614, | 614, | | 689 | Sequence 4, Appli | 59, 7 | • | 103, | æ | | Sequence 19, Appl | 38, | 31, / | • | 979, | 68, | 33, | 21, | 70, | | Sequence 97, Appl | - | • | Sequence 1, Appli | Sequence 44, Appl | Sequence 44, Appl |

ALIGNMENTS

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RESULT 2
US-09-816-737-1
                                                                             В
                                                                                                                                                                                                                                 ; OTHER INFORMATION: TGF-beta mimic US-09-113-696B-17
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US-09-113-696B-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                             SEQ ID NO 17
LENGTH: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 17, Application US/09113696B Patent No. US20020010134A1
                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/09/113,696B CURRENT FILING DATE: 1998-07-10 PRIOR APPLICATION NUMBER: 08/742,256 PRIOR FILING DATE: 1996-10-31 PRIOR APPLICATION NUMBER: 08/431,954 PRIOR FILING DATE: 1995-05-01 NUMBER OF SEQ ID NOS: 42 SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Bhatnagar, Rajendra S.
APPLICANT: Qian, Jing Jing
APPLICANT: Gough, Craig
TITLE OF INVENTION: PRETIDE COMPOSITIONS MIMICKING TGF-BETA
TITLE OF INVENTION: ACTIVITY
FILE REFERENCE: 6510-215CIP2
                                                                                                                                                                                                                                                                                     ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                             TYPE: PRT
                                                                                                                                                                                                                                                                       FEATURE:
                                                                                                                                                   y Match 100.0%;
Local Similarity 100.0%;
hes 15; Conservative 0;
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                                                                           GTPGPQGIAGQRGVV 15
                                                                                                                                                                     Score 80; DB 9;
Pred. No. 3.8e-05;
                                                                                                                                                       Mismatches
                                                                                                                                                                                         Length 15;
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; OTHER INFORMATION: synthetic peptide
US-09-816-737-1
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Best Local Similarity
Matches 15; Conserv
                                                                         Matches
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                                                                                                                                                                                                                                                                        APPLICANT: Larkin, Kevin
TITLE OF INVENTION: Composite Expandable Device with Polymeric Covering
TITLE OF INVENTION: Thereon, Delivery Apparatus and Method
FILE REFERENCE: 52200-8006.US01
CURRENT APPLICATION NUMBER: US/09/935,417
CURRENT FILING DATE: 2001-08-22
PRIOR APPLICATION NUMBER: US 09/385,691
PRIOR APPLICATION NUMBER: US 09/385,691
PRIOR APPLICATION STATE OF SEQ ID NOS: 1
PRIOR FILING DATE: 1999-08-30
NUMBER OF SEQ ID NOS: 1
SOFTWARE: FastSEQ for Windows Version 4.0
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PRIOR FILING DATE: 1989-08-14
NUMBER OF SEQ ID NOS: 14
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TITLE OF INVENTION: "Synthetic Compounds and Compositions
TITLE OF INVENTION: with Enhanced Cell Binding"
FILE REFERENCE: 05510223CON2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/09/816,737
CURRENT FILING DATE: 2001-03-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Rudakov,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: FastSEQ for Windows Version 4.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR FILING DATE: 1994-07-2
PRIOR APPLICATION NUMBER: 07
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER: 09/328,347 PRIOR FILING DATE: 1999-06-08
                                                                                                                                                                                                    TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                         Q ID NO 1
LENGTH: 15
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GTPGPQGIAGQRGVV 15
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Dinh, Linh
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Pred. No.
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Pred. No. 3.8e-05;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Application US/10176401 Publication No. US20030103960A1
Best Local Similarity Matches 15; Conserv
                                      Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Philippart, Pierre APPLICANT: Brasseur, Michele
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CURRENT FILING DATE: 2002-04-25
PRIOR APPLICATION NUMBER: US/09/561,554
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                                                                                                                                                                                                  NAME/KEY: PEPTIDE
LOCATION: (1)..(15)
OTHER INFORMATION: residue 766 to 780 from human collagen type 1
OTHER INFORMATION:
PUBLICATION INFORMATION:
AUTHORS: Bhatnagar RS, Qian JJ, Gough CA
TITLE: The role in cell binding of a beta-bend within the triple helical
TITLE: in collagen alpha 1 (I) chain: structural and biological evidence
TITLE: conformational tautomerism on fiber surface
JOUNNAL: Journal of Biomolecular Structure and Dynamics
VOLUME: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/10/176,401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: Structures Useful for Bone Engineering TITLE OF INVENTION: and Methods
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 2
SOFTWARE: FastSEQ for Windows Version 4.0
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TYPE: PRT
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                                                                                                                                           ISSUE: 5
PAGES: 547-560
DATE: 1997-04-01
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Local Similarity 100.0%;
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                   DB 15;
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CURRENT APPLICATION NUMBER: US/10/279,991
CURRENT FILING DATE: 2002-10-24
PRIOR APPLICATION NUMBER: 09/517,866
PRIOR FILING DATE: 2000-03-03
PRIOR FILING DATE: 2000-09-10
PRIOR APPLICATION NUMBER: 60/058,353
PRIOR FILING DATE: 1997-09-10
PRIOR APPLICATION NUMBER: PCT/US98/18838
PRIOR FILING DATE: 1998:09-10
NUMBER OF SEQ ID NOS: 23
SOFTWARE: Patentin version 3.1
SEQ ID NO 3
LENGTH: 25
     US-10-058-124-18
; Sequence 18, Application US/10058124
; Publication No. US20030119058A1
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APPLICANT: PROCKOP, DARWIN J.
APPLICANT: FERTALA, ANDRZEJ
TITLE OF INVENTION: INHIBITORS OF COLLAGEN ASSEMBLY
FILE REFERENCE: 053844-5001-01
FILE REFERENCE: 053844-5001-01
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CURRENT FILING DATE: 2001-12-12
NUMBER OF SEQ ID NOS: 10
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 1
LENGTH: 15
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Best Local :
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Publication No. US20030087315A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Dang, Mai Huong
APPLICANT: Chiu, Phillip
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Pred. No.
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6.3e-05;
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                                        APPLICANT:
APPLICANT:
                                                                                                                            APPLICANT: Millennium Pharmaceuticals, Inc APPLICANT: Berger, Allison
                                                                             APPLICANT:
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T: Schlegel, Robert
T: Monahan, John E.
T: Thibodeau, Stephen N.
T: Burgart, Lawrence J.
INVENTION: NOVEL GENES, COMPOSITIONS, KITS, AND
                                                                                        Guillemette, Tracy L.
Kamatkar, Shubhangi
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SEQUENCE DESCRIPTION: SEQ ID NO: 18: US-10-058-124-18
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APPLICANT: Qvist, Per
Bonde, Mar
                                                                                                                                                                                                                                                                                                                                           TELEX: 236687
INFORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
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COMPUTER READABLE FORM:
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CORRESPONDENCE ADDRESS:
ADDRESSEE: Darby & Darby PC
                                                                                                                                                                                                             ORGANISM: Homo sapiens IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION: TELEPHONE: 212-527-7700
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: A Method for Assaying Collagen Fragments
in Body Fluids, A Test Kit and Means for Carrying Out th
Method and Use of the Method to Diagnose the Presence of
Disorders Associated with the Metabolism of
823 GTPGPQGIAGQRGVV 837
                                                                      th 100.0%; Score 80; Di Similarity 100.0%; Pred. No. 0.0 15; Conservative 0; Mismatches
                                    1 GTPGPQGIAGQRGVV 15
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FILING DATE: 2002-WAY-12
APPLICATION NUMBER: 08/187,319
FILING DATE: <Unknown>
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COMPUTER: IBM PC compati
                                                                                                                                                                                                                                                                                                          TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: 212-753-6237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Gogoris, Adda C
REGISTRATION NUMBER: 29,714
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                                                                                              0.0031;
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                                                                                                                                                                                       RESULT 11
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                                                                                                                       GENERAL INFORMATION:
                                                                                                                                     Sequence 36, Application US/10171311 Publication No. US20030087270A1
                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 159
LENGIH: 1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 28
LENGTH: 1464
                                                                                                                                                                                                                                                                                                           Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY TITLE OF INVENTION: AND DIAGNOSIS OF PANCREATIC CANCER FILE REFERENCE: 210121.566
CURRENT APPLICATION NUMBER: US/10/060,036
CURRENT FILING DATE: 2002-01-30
NUMBER OF SEQ ID NOS: 4560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Kalos, Michael D. APPLICANT: Lodes, Michael J. APPLICANT: Persing, David H. APPLICANT: Hepler, William T. APPLICANT: Jiang, Yuqiu
                                                                                    APPLICANT:
APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION NUMBER: US/10/301,83
CURRENT FILING DATE: 2002-11-21
PRIOR APPLICATION NUMBER: US 60/339,971
PRIOR FILING DATE: 2001-12-10
PRIOR APPLICATION NUMBER: US 60/361,978
PRIOR APPLICATION NUMBER: US 60/381,988
                                      APPLICANT:
                                                        APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR FILING DATE: 2002-05-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: METHODS FOR IDENTIFICATION, ASSESSMENT, PREVENTION, AND TITLE OF INVENTION: THERAPY OF COLON CANCER FILE REFERENCE: MPMO1-029P2RNM
                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: PRT
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ORGANISM: Homo Sapiens
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les 15; Conserv
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                                                                                                   Schlegel, Robert
Kamatkar, Shubhangi
Glatt, Karen
Gannavarapu, Manjula
                                                                Chen, Yan
Zhao, Xumei
                                                 Monahan, John
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Pred. No.
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Pred. No. 0.
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 PRIOR APPLICATION NUMBER: GB 9929487.8
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US-10-149-352-2

Sequence 2, Application US/10149352

Publication No. US20030105050A1

GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                               Matches
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CURRENT APPLICATION NUMBER: US/10/149,352
CURRENT FILING DATE: 2002-66-10
PRIOR APPLICATION NUMBER: PCT/GB00/04741
PRIOR FILING DATE: 2000-12-12
                                                                                  APPLICANT: Beri, Rajinder TITLE OF INVENTION: ANTISENSE OLIGONUCLEOTIDES FILE REFERENCE: 06275-254US1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Meristem Therapeutics, S.A. TITLE OF INVENTION: Recombinant Collagens and Derived Proteins Produced by Plants, TITLE OF INVENTION: obtaining Such and Their Uses FILE REFERENCE: 1149-3 DIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: US 09/331,347 PRIOR FILING DATE: 1999-08-17
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CURRENT FILING DATE: 2002-08-09
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PRIOR APPLICATION NUMBER: US 60/298,155
PRIOR FILING DATE: 2001-06-13
PRIOR APPLICATION NUMBER: US 60/335,936
PRIOR FILING DATE: 2001-11-14
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TITLE OF INVENTION: NOVEL GENES, COMPOSITIONS, KITS, AND METHODS
TITLE OF INVENTION: IDENTIFICATION, ASSESSMENT, PREVENTION, AND
TITLE OF INVENTION: OF CERVICAL CANCER
FILE REFERENCE: MRI-035
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CURRENT FILING DATE: 2002-06-12
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: PRT
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Pred. No. 0.0034;
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Pred. No. 0.0034;
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; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-177-293-65
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; TYPE: PRT
; ORGANISM: HOmo sapiens
US-10-149-352-2
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PRIOR APPLICATION NUMBER: US 60/299,887

PRIOR PILING DATE: 2001-06-21

PRIOR APPLICATION NUMBER: US 60/301,572

PRIOR PELICATION NUMBER: US 60/306,501

PRIOR APPLICATION NUMBER: US 60/306,501

PRIOR PILING DATE: 2001-07-18

PRIOR APPLICATION NUMBER: US 60/325,002

PRIOR APPLICATION NUMBER: US 60/325,002

PRIOR APPLICATION NUMBER: US 60/325,502

PRIOR APPLICATION NUMBER: US 60/362,585

PRIOR APPLICATION NUMBER: US 60/362,585

PRIOR APPLICATION NUMBER: US 60/362,585

PRIOR FILING DATE: 2002-03-05

PRIOR APPLICATION NUMBER: US 60/362,585

PRIOR APPLICATION NUMBER: US 60/362,585

PRIOR APPLICATION NUMBER: US 60/362,585

PRIOR FILING DATE: 2002-65-14
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Best Local Similarity
Matches 15; Conserv
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NUMBER OF SEQ ID NOS: 14
SOFTWARE: PATENTIN VET. 4.0
SEQ ID NO 2
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                                                                          Matches
                                                                                        Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Sahin, Aysegul
APPLICANT: Mills, Gordon B.
TITLE OF INVENTION: COMPOSITIONS, KITS, AND METHODS FOR IDENTIFICATION, ASSESSMENT,
TITLE OF INVENTION: PREVENTION, AND THERAPY OF BREAST CANCER
FILE REFERENCE: MRI-038
CURRENT APPLICATION NUMBER: US/10/177,293
CURRENT FILING DATE: 2002-06-21
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947 GTPGPQGIAGQRGVV 961
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Mertens, Maureen
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Kamatkar, Shubhangi
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Hortobagyi, Gabriel N.
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Monahan, John
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Pred. No. 0.0034;
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                                                                        Mismatches
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Search completed: August 29, 2003, 18:30:43 Job time: 26 secs
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                                                                                                                                                                                                                                             SEQ ID NO 1
LENGTH: 234
TYPE: PRT
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Publication No. US20030021821A1
                                                                                                                                         Matches
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                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Fertala, Andrzej
APPLICANT: Ko, Frank
TITLE OF INVENTION: Collagen and Collagen-like Peptide Containing Polymeric
TITLE OF INVENTION: Matrices
FILE REFERENCE: DRE-0032
CURRENT APPLICATION NUMBER: US/09/895,674
CURRENT FILING DATE: 2001-06-28
                                                                                                                                                                                                                                                                                                PRIOR FILING DATE: 2000-06-23
NUMBER OF SEQ ID NOS: 1
SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                   CURRENT FILING DATE: 2001-06-28
PRIOR APPLICATION NUMBER: PCT/US01/
PRIOR FILING DATE: 2001-06-25
PRIOR APPLICATION NUMBER: 60/ 214,034
                                                                                                                                                          Local
                                                                      67 GPPGPQGLAGQRGIV
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                                                                                       1 GTPGPQGIAGQRGVV 15
                                                                                                                                                        Similarity
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PIR_76:*
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Gapop 10.0 , Gapext 0.5
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80
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB | ID | |
|---------------|-------|----------------|--------|-----|--------|--------------------|
| 1 | 80 | 100.0 | 779 | _ ; | CGBO1S | 1(|
| N | 80 | 100.0 | 1042 | Ľ | CGCH1S | lagen alpha 1(|
| ω | 80 | • | 1453 | N | S21626 | lagen alpha 1(|
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| 5 | 71 | | 1418 | N | T45467 | lagen alpha 1(|
| σ | 71 | | 1419 | 2 | A41182 | lagen alpha 1(|
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| 10 | 62 | • | 1763 | N | S16366 | alpha 2(|
| 11 | 50 | 73.8 | 618 | N | S32436 | collagen alpha 2(I |
| 13 | 58 | | 1496 | , ب | CGHU2V | collagen alpha 2/V |
| 14 | 58 | | 1497 | N | 149607 | |
| 15 | 57 | | 310 | N | I50696 | alpha 1(|
| 16 | . 57 | | 636 | 2 | S41067 | collagen alpha 1(I |
| 17 | 57 | • | 886 | 2 | 150694 | alpha 1(|
| 18 | 57 | 1. | 1049 | ш | CGBO7S | alpha 1(|
| 19 | 57 . | 1. | 1414 | ۲ | S23809 | lagen alpha 2(|
| 20 | 57 | 1. | 1464 | N | S59856 | pha 1(|
| 21 | 57 | _ | 1466 | Н | CGHU7L | alpha 1(|
| 22 | 56 | 0 | 677 | N | S23296 | alpha 2(|
| 23 | 56 | 0 | 920 | N | A45748 | alpha 1(|
| 24 | 56 | 0 | 1366 | ۲ | CGHU2S | alpha 2(|
| 25 | 56 | 0 | 1669 | _ | CGHU4B | _ |
| 26 | 56 | 0 | 1669 | _ | CGMS4B | alpha 1(|
| 27 | 55 | 8 | 688 | N | A53330 | gen alpha 2(|
| 28 | 55 | 8 | 1051 | Ν | A35763 | lagen alpha 2 |
| 29 | 55 | 8 | 1492 | 2 | A40333 | alpha 1' |
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| 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | 32 | 31 | 30 |
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| 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | .53 | 53 | 53 | 53 | 54 |
| 66.2 | 66.2 | 66.2 | 66.2 | 66.2 | 66.2 | 66.2 | 66.2 | 66.2 | 66.2 | 66.2 | 66.2 | 66.2 | 66.2 | 66.2 | 67.5 |
| 1759 | 1758 | 1752 | 1603 | 1142 | 959 | 775 | 751 | 680 | 673 | 307 | 305 | 299 | 287 | 266 | 298 |
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| T29351 | T29350 | A45407 | S23810 ' | JX0369 | S32605 | A61228 | S64741 | CGHU1D | CGBO6C | T19582 | T30165 | T22705 | T15779 | T22706 | T32371 |
| collagen alpha 2(I | hypothetical prote | collagen alpha 3(I | collagen alpha 1(X | collagen alpha 1(X | collagen alpha 3(V | collagen alpha 2(I | cuticle collagen - | collagen alpha 1(X | collagen alpha 1(I | hypothetical prote |

| 1(I R;Wendt, P; Mark, K.V.D.; Rexrodt, F.; Kuehn, K. 2(I Eur. J. Biochem. 30, 169-183, 1972 1(II A;Tit.tle: The covalent structure of collagen. The amino-ali(I A;Reference number: A91201; MUID:73042276; PMID:4343808 12(I A;Accession: A91201 A;Accession: A91201 A;Accession: Sprotein 1(V A;Molecule type: protein 1(I A;Residues: 563-675 <wen> A;Residues: 563-675 <wen> 1(I R;Fletzek, P.P; Rexrodt, F.W; Wendt, P.; Stark, M.; Kl 1(I R;Fletzek, P.P; Barrodt, F.W; Wendt, P.; Stark, M.; Kl 2(I Bur. J. Biochem. 30, 163-168, 1972</wen></wen> | * | | RESULT 1 CGBO1S CGBO1S collagen alpha 1(I) chain - bovine (C;Species: Bos primigenius taurus (c C;Species: Bos primigenius taurus (c C;Species: Bos primigenius taurus (c C;Sate: 24-Apr-1984 *sequence_revisi C;Accession: A91193; A91229; A91387; C;Accession: A91193; A91229; A91387; Bur. J. Blochem. 27, 231-237, 1972 A;Title: Structural characterization A;Reference number: A91193; MUID:722 A;Accession: A91193 A;Accession: A91193 A;Residues: 1-19 <rau> A;Residues: 1-19 <rau> A;Experimental source: skin A;Rote: the epsilon carbon of Lys-9, R;Fietzek, p.P.; Kuehn, K.</rau></rau> | 37 53 66.2 751 38 53 66.2 775 39 53 66.2 775 40 53 66.2 959 41 53 66.2 1142 42 53 66.2 1603 43 53 66.2 1752 44 53 66.2 1752 45 53 66.2 1759 |
|--|--|---|---|---|
| R:Wendt, P.; Mark, K.V.D.; Rexrodt, F.; Kuehn, K. Eur. J. Biochem. 30, 169-183, 1972 A;Tille: The covalent structure of collagen. The amino-acid sequence A;Reference number: A91201; MUID:73042276; PMID:4343808 A;Accession: A91201 A;McDecule type: protein A;Residues: 563-675 <wen> A;Experimental source: skin A;Experimental source: skin R;Fistzek, P.P.; Rexrodt, F.W.; Wendt, P.; Stark, M.; Kuehn, K.</wen> | A; TILLE: THE COVALENT SITUCTURE OF COLLAGEN: AGDIN SEQUENCE A; Reference number: A91387; MUID:73049499; PMID:4673951 A; Accession: A91387 A; Accession: A91387 A; MOID:A STATE STAT | Eur. J. Blochem. 52, 77-82, 1975 A;Title: The covalent structure of collagen: amino-acid seq A;Reference number: A91229; MUID:76022320; PMID:1164916 A;Accession: A91229 A;Accession: Lyse: Protein A;Residues: 20-145 <fie> A;Experimental source: skin A;Experimental source: skin A;Note: Lys-103 is hydroxylated and binds glucosylgalactose B;Fietzek, P.P.; Wendt, P.; Kell, I.; Kuehn, K. FEBS Lett. 26, 74-76, 1972</fie> | tentative sequence) (: attle) on 31-Dec-1993 #text. A91211; A91201; A9121 yr, H. of N-terminal antiger 55334; PMID:4115172 by homology with the | 1 CGHULD 2 \$64741 2 A61228 2 A61228 2 JX0369 2 JX0369 2 S33610 2 A45407 2 T29350 2 T29351 ALIGNMENTS |
| id sequence of the 112 resid | equence of alphal-CB7 | of the cyanogen-bro | fragments) Change 31-Mar-2000 OO; A43048; A02853 nic determinants in calf and | collagen alpha 1(X cuticle collagen - collagen - collagen alpha 2(I collagen alpha 1(X collagen alpha 1(X collagen alpha 3(I hypothetical prote collagen alpha 2(I collagen alpha 2(I hypothetical prote collagen alpha 2(I |

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A;Experimental source: skin
C;Comment: Lysines at positions 115, 124, 274, 346, 424, 496, 658, and 670 may be hydrox
C;Comment: Prolines in the third position of the tripeptide repeating unit (G-x-Y) are hydrox
C;Comment: The order of the eight CNBr peptides in the alpha 1(I) chain of bovine skin c
C;Comment: The complete chain contains 1052 residues.
C;Comment: The complete chain contains 1052 residues.
C;Superfamily: collagen alpha 1(I) chain; fibrillar collagen carboxyl-terminal homology;
C;Reywords: coiled coil; extracellular matrix; glycoprotein; pyroglutamic acid; trimer;
F;1/Modified site: pyrrolidone carboxylic acid (Gln) #status experimental
                                                                                                                                                                                                                                                                                                                                                     A.Experimental source: skin
A.Note: residues 1037-1042 above correspond to the carboxyl end of the protein
C:Comment: Lysines at positions 103, 700, 934, and 946 above may be hydroxylated in some
C:Comment: Most of the prolines at the third position of the tripeptide repeating unit (
C:Comment: Pro-1002 is the only 3-hydroxyproline and the only hydroxylated proline in pd
C:Superfamily: collagen alpha 1(1) chain; fibrillar collagen carboxyl-terminal homology;
C:Keywords: coiled coil; extracellular matrix; glycoprotein; pyroglutamic acid; trimer;
F:1/Modified site: pyrrolidone carboxylic acid (Gin) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               collagen alpha 1(I) chain - chicken (tentative sequence) (fragments) C;Species: Gallus gallus (chicken)
C;Date: 12-Aug-1981 #sequence_revision 06-Jul-1982 #text_change 31-Mar-2000 C;Accession: A90458; A90181; A02857
R;Highberger, J.H.; Corbett, C.; Dixit, S.N.; Yu, W.; Seyer, J.M.; Kang, A.H. Blochemistry 21, 2048-2055, 1982
A;Title: Amino acid sequence of chick skin collagen alpha1(I)-CB8 and the cc A;Reference number: A90458; MUID:82231995; PMID:7093229
A;Accession: A90458
RESULT
S21626
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A;Title: Evidence for a previously undetected sequence at the carboxyterminus of A;Reference number: A90181; MUID:72243016; PMID:5047697
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A; Residues: 1-1036 <HIG>
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A;Accession: A43048
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A; Molecule type: protein
A; Residues: 676-758 <F14>
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A;Residues: 1037-1042 <EYR>
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                                                                                                                                                                                                                                                               Score 80; DB 1;
Pred. No. 9.9e-05;
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7.5e-05;
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                                                                                                                                                                                                                                                                                             Length 1042;
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A;Cross-references: GB:M17491; NID:g192263; PIDN:AAA37334.1; PID:g192264 R;Harbers, K.; Kuehn, M.; Delius, H.; Jaenisch, R. Proc. Natl. Acad. Sci. U.S.A. 81, 1504-1508, 1984 A;Title: Insertion of retrovirus into the first intron of alphal(I) collagen gene A;Reference number: 149557; MUID:84170331; PMID:6324198 A;Accession: 149557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross references: GB.MI4423; NID:g192261; PIDN:AAA37333.1; R;Monson, J.M.; Friedman, J.; McCarthy, B.J. Mol. Cell. Biol. 2, 1363-1371, 1982
A;Title: DNA sequence analysis of a mouse pro-alpha-1(I) proc A;Reference number: I49559; MUID:83141374; PMID:6298597
A;Accession: I49559
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A;Title: The complete cDNA coding sequence for the mouse pro-alpha-1(I) chain A;Reference number: S57243
                                                                                                                                                                                A;Introns: 770/3; 788/3; 806/3; 842/3; 860/3; 878/3; 932/3; 968/3; 1004/3; 1022/3; 10 C;Superfamily: collagen alpha 1(I) chain; fibrillar collagen carboxyl-terminal homolo C;Keywords: coiled coil; extracellular matrix; glycoprotein; heterotrimer; triple hel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R:Fenton, S.P.; Lamande, S.R.; Hannagan, M.; Stacey, A.; Jaenisch, R.; Batel Biochim. Biophys. Acta 1216, 469-474, 1993
A:Title: Genomic sequence of mouse COLIA1 encoding the collagen propeptides A;Reference number: S39789; MUID:94092741; PMID:8268229
A;Accession: S39789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Residues: 1-1453 <LIS>
A; Cross references: EMBL:U08020; NID:9470673; PIDN:AAA88912.1;
R; Metsaeranta, M.; Toman, D.; de Crombrugghe, B.; Vuorio, E.
Biochim. Biophys. Acta 1089, 241-243, 1991
A; Title: Specific hybridization probes for mouse type I, II, II
                                                              F;1-22/Domain: signal sequence #status predicted <SIG>
F;23-151/Domain: amino-terminal propeptide #status predicted <PRO>
F;30-89/Domain: von Willebrand factor type C repeat homology <VWC>
                                                                                                                                                                                                                                                                                                                                                                             A;Molecule type: DNA
A;Residues: 1-80,'5',82-105,'D',107-147 <REF>
A;Cross-references: EMBL:X54876; NID:g50486; PIDN:CAA38657.1; PID:g50487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Title: DNA methylation represses the murine alpha 1(I) A; Reference number: I48300; MUID:94344105; PMID:8065328 A; Accession: I48300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Molecule type: DNA
A;Moslecule type, 'E',82-105,'D',107-185;1031-1201,'G',1203-1218,'E',1220-1221,'T',122
A;Res.dues: 1-06,'E',82-105,'D',107-185;1031-1201,'G',1203-1218,'E',1220-1221,'T',122
R;Rhodes, K.; Rippe, R.A.; Umezawa, A.; Nehls, M.; Brenner, D.A.; Breindl, M.
Mol. Cell. Biol. 14, 5950-5960, 1994
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Status: preliminary; translated from GB/EMBL/DDBJ
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A; Residues: 1-25 < RE2>
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A; Residues: 735-1130 < RES>
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A; Residues: 518-1128 <FRE>
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A; Residues: 1442-1453 <MET>
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A; Accession: S16374
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A; Residues: 1-1453 <L:
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                               collagen alpha 1(I) chain #status predicted <MAT>
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collagen
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Nature 310, 337-340, 1944
A;Title: Human proalphal(I) collagen gene structure reveals evolutionary cons.
A;Reference number: A93335; MUID:84270697; PMID:6462220
A;Accession: A93335
A;Molecule type: DNA
A;Residues: 1-56, 'Q', 60-181 <CHU>
A;Residues: 1-58, 'Q', 60-181 <Amount of the human pro-alpha 1(I) collage A;Residues: 1-54 <Amount of the human pro-alpha 1(I) collage A;Residues: 1-54 <Amount of the human pro-alpha 1(I) collage A;Residues: 1-54 <Amount of the human pro-alpha 1(I) collage A;Residues: 1-54 <Amount of the human pro-alpha 1(I) collage A;Residues: 1-54 <Amount of the first intron contribute to transcriptiona A;Reference number: 33943; MUID:88097389; PMID:3480516
A;Residues: 1-34 <BORDA A;Residues: 1-540, 2315-2320, 1985
A;Title: Fine structural analysis of the human pro-alpha 1 (I) collagen gene. A;Reference number: 155237; MUID:85130970; PMID:2857713
A;Reference: GB:M10627; NID:9180383; PIDN:AAA51992.1; PID:9553226
A;Title: In vivo and in vitro noncovalent association of excised alpha1(I) amanch of the college alpha1(I) ama
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A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-369, 'L', 371-589 <DAL>
A;Cross-references: GB:M20789; NID:g179593; PIDN:AAB59373.1; PID:g179594
A;Cross-references: GB:M20789; NID:g179593; PIDN:AAB59373.1; PID:g179594
A;Cross-references: GB:M20789; NID:g179593; PIDN:AAB59373.1; PID:g179594
A;Cross-reference in the prepro-alpha-1(I) chain
A;Reference number: S01143; MUID:89025644; PMID:3178743
A;Accession: S01143
A;Accession: S01143
A;Molecule type: mRNA
A;Residues: 1-472 <TROD
A;Cross-references: EMBL:X07884; NID:g30015; PIDN:CAA30731.1; PID:g30016; GB:M3
A;Note: submitted to the EMBL/GenBank/DDBJ databases by Prockop, D.J., 13-JUN-1
A;Note: Submitted to the EMBL/GenBank/DDBJ databases by Prockop, D.J., 13-JUN-1
B;Chu, M.L.; de Wet, W.; Bernard, M.; Ding, J.F.; Morabito, M.; Myers, J.; Will
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A;Residues: 1-472 <TRO>
A;Residues: 1-472 <TRO>
A;COSS-references: EMBL:X07884; NID:g30015; PIDN:CAA30731.1; PID:g30016; GB:M36546;
A;Cote: submitted to the EMBL/GenBank/DDBJ databases by Prockop, D.J., 13-JUN-1988
R;Chu, M.L.; de Wet, W.; Bernard, M.; Ding, J.F.; Morabito, M.; Myers, J.; Williams,
Nature 310, 337-340, 1984
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EMBO J. 8, 1;
A; Ti+1
A;Note: mutant sequence from patient with osteogenesis imperfecta R;Bernard, M.P.; Chu, M.L.; Myers, J.C.; Ramirez, F.; Eikenberry, E.F. Biochemistry 22, 5213-5223, 1983
A;Title: Nucleotide sequences of complementary deoxyribonucleic acids A;Reference number: A90476; MUID:84080385; PMID:6689127
A;Accession: A90476
                                                                                                                                                                                                                       A;Molecule type: mRNA
A;Residues: 342-352,'C',354-359 <WI2>
A;Cross-references: GB:S64717; NID:9408195; PIDN:AAB27677.1;
                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: mRNA
A; Residues: 281-302;402-420;823-843;925-944;1026-1045;1143-1162 <LAB>
R; Residues: 281-302;402-420;823-843;925-944;1026-1045;1143-1162 <LAB>
R; Wirtz, M.K.; Rao, V.H.; Glanville, R.W.; Labhard, M.E.; Pretorius, Connect. Tissue Res. 29, 1-11, 1993
Connect. Tissue Res. 29, 1-11, 1993
A; Title: A cysteine for glycine substitution at position 175 in an al, A; Reference number: I52905; MUID:93339042; PMID:8339541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matrix 10, 124-130, 1990
A; Title: Segmental amplification of the entire helical A; Reference number: S15989; MUID:90326017; PMID:2374517
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A; Residues: 258-268;1347-1357 < DEA>
A; Residues: 258-268;1347-1357 < DEA>
A; Cross-references: GB: $67495; NID: g239007; PIDN: AAB20350.1; PID: g239008
A; Note: sequences from the 5' and 3' ends only are shown; mutant sequence
R; Morgan, P.H.; Jacobs, H.G.; Segrest, J.P.; Cunningham, L.W.
J. Biol. Chem. 245, 5042-5048, 1970
A; Title: Comparative study of glycopeptides derived from selected vertebra
A; Reference number: A92069; MUID: 71001508; PMID: 4319110
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A; Residues: 175-187;274-287,'P',289 < BAE>
A; Residues: 175-187;274-287,'P',289 < BAE>
A; Note: sequence of collagen alpha 1(S)(I) isolated from R; Deak, S.B.; Scholz, P.M.; Amenta, P.S.; Constantinou, C.J. Biol. Chem. 266, 21827-21832, 1991
A; Title: The substitution of arginine for glycine 85 of topperative melting of intact type I collagen.
A; Reference number: I55342; MUID:92042092; PMID:1718984
A; Accession: I55342
B; Status: Tangelated from GB/MMBI (NDBI
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A;Title: A critical crosslink region in human-bone-derived
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A; Residues: 33-52
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A; Residues: 162-198,'2',200-201,'z',203-206,'z',208-209,'z',211-228,'B',230,'BB'
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A; Residues: 156-183 <WEI>
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A; Residues: 11/9-138/, R, 7, 100 200.
A; Experimental source: fetal cell 88-251
A; Experimental source: Eyre, D.R.; Starman, B.J.; Andre R; Cohn, D.H.; Apone, S.; Eyre, D.R.; Starman, B.J.; Andre J. Biol. Chem. 263, 14605-14607, 1988
A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Substitution of Cysteine for Glycine within the A; Title: Sub
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A; Molecule type: DNA
A; Molecule type: DNA
A; Residues: 746-766, 'S', 768-781 <FOR>
A; Cross references: GB:L47667; NID:91009093; PIDN:AAB59576
A; Chessler, S.D.; Wallis, G.A.; Byers, P.H.
J. Biol. Chem. 268, 18218-18225, 1993
A; Title: Mutations in the carboxyl-terminal propeptide of A; Reference number: A47426; MUID:93352646; PMID:8349697
A; Accession: A47426.
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A; Molecule type: mRNA
A; Residues: 1179-1336,1339-1464 <CH6>
A; Residues: fetal cell 86-146
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A; Molecule type: mRNA
A; Molecules: 1179-1276, 'H', 1278-1464 <CH5>
A; Residues: 1179-1276; 'H', 1278-1464 <CH5>
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A;Residues: 1179-1276, 'H',1278-1336,1339-1387,'R',1389-1464 <CHE>
A;Residues: 1179-1276, 'H',1278-1336,1339-1387,'R',1389-1464 <CHE>
A;Rross-references: GB:S64596; NID:g407589; PIDN:AAB27856.1; PID:g407590
A;Note: sequence extracted from NCBI backbone (NCBIN:136444, NCBIP:13644
A;Note: does not represent an experimentally determined sequence but thr
A;Note: Sequence Sequence but thr
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A; Residues: 710-720, 'E', 722-737, 'E', 739-745 <WAL>
A; Residues: 710-720, 'E', 722-737, 'E', 739-745 <WAL>
A; Note: the authors translated the codons CAG for 721 and R; Forlino, A.; Zolezzi, F.; Valli, M.; Pignatti, P.F.; Cet Hum. Mol. Genet. 3, 2201-2206, 1994
A; Title: Severe (type III) osteogenesis imperfecta due to A; Reference number: I54365; MUID:95187161; PMID:7881420
A; Accession: I54365
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A:Residues: 472-594, 'R',596-607 <CH3>
A:Residues: 472-594, 'R',596-607 <CH3>
A:Cross-references: GB:K03178; GB:K03179; NID:g179612; NID:g179613;
A:Cross-references: GB:K03178; CB:K03179; NID:g179612; NID:g179613;
A:Cross-references: GB:K03178; GB:K03179; NID:g179612; NID:g179613;
A:Cross-references: GB:K03179; NID:g179612; NID:g179612; NID:g179613;
A:Cross-references: GB:K03179; NID:g179612; NID:g179612; NID:g179613;
A:Cross-references: GB:K03179; NID:g179612; NID:g179612; NID:g179612;
A:Cross-references: GB:K03179; NID:g179612; NID:g179
                                                                                                                                                                                                               A;Cross-references: GB:M23213; NID:g340842; PIDN:AAB59363.1; FA;Note: mutant sequence from a patient with mild osteogenesis R;Maekelae, J.K.; Raassina, M.; Virta, A.; Vuorio, E. Nucleic Acids Res. 16, 349, 1988
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A; Residues: 1187-1194,'C',1196-1220 <COH>
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A; Accession: 155269
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A;Cross-references: GB:K01228; NID:g180391; PIDN:AAA51995.1; PIA:Kote: sequence partially completed for missing nucleotides by R;Chu, M.L.; Gargiulo, V.; Williams, C.J.; Ramirez, F.
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A; Residues: 1179-1464 <CH4>
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A; Residues: 425-1250,
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Brunelli, P.C.;
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A;Cross-references: GB:S63190; NID:g234368; PIDN:AAB19627.1; PID:g234369
A;Note: sequence extracted from NCBI backbone (NCBIN:63190, NCBIP:63192)
C;Superfamily: collagen alpha 1(I) chain; fibrillar collagen carboxyl-terminal homolo C;Keywords: alternative splicing; coiled coil; extracellular matrix; glycoprotein; tr F;1191-1419/Domain: fibrillar collagen carboxyl-terminal homology <FCC>
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A;Cross-references: GB:M65161
R;Cheah, K.S.; Lau, E.T.; Au, P.K.; Tam, P.P.
Development 111, 945-953, 1991
A;Title: Expression of the mouse alpha 1(II) collagen gene A;Reference number: A44885; MUID:91347939; PMID:1879363
A;Accession: A44885
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A;Title: Mouse type II collagen gene. Complete nucleotide sequence, A;Reference number: A41182; MUID:91358489; PMID:1885613
A;Accession: A41182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     collagen alpha 1(II) chain precursor - mouse C;Species: Mus musculus (house mouse) C;Date: 28-May-1992 #sequence_revision 28-May-1992 #text_change 13-Aug-1999 C;Accession: A41182; A44885
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A; Residues: 1-28 <CHE>
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A;Residues: 1-1418 <RIC>
A;Cross-references: EMBL:U62528; PIDN:AAB05773:1
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A; Accession: T45467
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                                                                           Conservative
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                                                                                               Pred. No. 0.0036;
                                                                                                                Score 71;
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ion 31-Jan-2000 #text_change 04-Mar-2000
                                                                             Mismatches
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A;Residues: 7-28, 'R', 99-157, 'p',159-440,'G',442-456,'E',458-64
A;Cross-references: EMBL:X15711; NID:g30040; PIDN:CAA34683.1;
A;Note: alternative splice form 1
R;Ryan, M.C.; Sandell, L.J.
J. Biol. Chem. 265, 10334-10339, 1990
A;Title: Differential expression of a cysteine-rich domain in A;Reference number: A35428; MUID:90285153; PMID:2355003
A;Reference number: A35428
A;Status: not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 27-81,'L',83-103 <RYA2>
A;Note: alternative splice form 2; Splicing appears to be unde R;Su, M.W.; Benson-Chanda, V: Vissing, H.; Ramirez, F.
Genomics 4, 438-441, 1989
A;Title: Organization of the exons coding for Pro alpha-1(II)
A;Reference number: A30147; MUID:89233138; PMID:2714801
A;Accession: A30147
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A; Residues: 1-8, 'T', 10-28 < NUN>
A; Residues: 1-8, 'T', 10-28 < NUN>
A; Residues: 1-8, 'T', 10-28 < NID:g180872; PIDN:AAA52051.1; PID:g553237
A; Cross-references: GB:M25698; NID:g180872; PIDN:AAA52051.1; PID:g553237
R; Baldwin, C.T.; Reginato, A.M.; Smith, C.; Jimenez, S.A.; Prockop, D.J.
Biochem. J. 262, 521-528, 1989
A; Hitle: Structure of cDNA clones coding for human type II procollagen. The alpha-1(II)
A; Hitle: Structure number: S06496; MUID:90026318; PMID:2803268
A; Accession: S06496
A; Accession: S06496
A; Accession: S06496
A; Molecule type: mRNA
A; Residues: 7-28, 'R', 99-157, 'P', 159-440, 'G', 442-456, 'E', 458-640, 'A', 642-831, 'PA', 834, 'F'
A; Cross-references: EMBL:X16711; NID:g30040; PIDN:CAA34683.1; PID:g30041
A;Molecule type: DNA
A;Residues: 104-157, 'P',159-236 <SUM>
A;Residues: 104-157, 'P',159-236 <SUM>
A;Residues: 104-157, 'P',159-236 <SUM>
A;Cross-references: GB:J03065; GB:M23660; GB:M25655; GB:M25656; GB:M25730;
R;Ala-Kokko, L.; Baldwin, C.T.; Moskowitz, R.W.; Prockop, D.J.
Proc. Natl. Acad. Sci. U.S.A. 87, 6565-6568, 1990
A;Title: Single base mutation in the type II procollagen gene (COL2A1) as A;Reference number: A94227; MUID:90370826; PMID:1975693
A;Accession: A33116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A:Cross-references: EMBL:X58709; GB:S40537; NID:g35659
A:Note: this translation is not annotated in GenBank entry HSPRC
R:Nunez, A.M.; Kohno, K.; Martin, G.R.; Yamada, Y.
Gene 44, 11-16, 1986
A:Title: Promoter region of the human pro-alpha-1-(II)-collagen
A:Reference number: A24828; MUID:87031574; PMID:3021582
A:Accession: A24828
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A;Title: Structural analysis of the regulatory elements of A;Reference number: S24270; MUID:92344585; PMID:1637314
A;Accession: S24270
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A; Molecule type: DNA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R:Ryan, M.C.; Sieraski, M.; Sandell, L.J. Genomics 8, 41-48, 1990
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A; Residues: 1-28, 'R', 99-1487 <SU2>
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A; Rolecule type: DNA
A; Rolecule type: DNA
A; Residues: 1032-1056,'N',1058-1068,'T',1070-1487 <CHE>
A; Residues: 6B: J00116; NID: g180395; PIDN: AAA519
A; Cross-references: GB: J00116; NID: g180395; PIDN: AAA519
A; Cross-references: GB: J00116; NID: g180395; PIDN: AAA519
A; Claima, K.; Vuorio, T.; Vuorio, E.
Nicolair Acids Res. 15, 9499-9504, 1987
                                                                                                                                                                                                                                              A; Molecule type: DNA
A; Residues: 1164-1184, 'GpSGKDGANGIPGPI', 1185-1199 <TIL2>
A; Residues: 1164-1184, 'GpSGKDGANGIPGPI', 1185-1199 <TIL2>
A; Cross-references: EMBL:M37126; NID:g180808; PIDN:AAA52037.1; PID:g180809
A; Mote: mutant sequence from a patient with spondyloepiphyseal dysplasia
A; Otheah, K.S.E.; Stoker, N.G.; Griffin, J.R.; Grosveld, F.G.; Solomon, E.
Proc. Natl. Acad. Sci. U.S.A. 82, 2555-2559, 1985
A; Title: Identification and Characterization of the human type II collagen
A; Reference number: A02858; MUID:85190534; PMID:3857598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Status: nucleic acid sequence not shown; not compared with conceptual translation A, Molecule type: DNA; mRNA
A; Residues: 752-831, 'PA', '834, 'F',836-1005, 'K',1007-1036, 'Q',1038-1052, 'E',1054-1068,' A; Cross-references: GB:L00977; NID:g180812; PINN:AAB33914.1; PID:g258774
A; Note: sequence extracted from NCBI backbone (NCBIP:117273); parts of this sequence A; Note: this translation is not annotated and this publication is not cited in GenBar A; Note: mutant sequence associated with perinatal lethal hypochondrogenesis R; Tiller, G.E.; Rimoin, D.L.; Murray, L.W.; Cohn, D.H.
Proc. Natl. Acad. Sci. U.S.A. 87, 3889-3893, 1990
A; Title: Tandem duplication within a type II collagen gene (COL2A1) exon in an indivial accession: $16502; MUID:90251662; PMID:2339128
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A; Residues: 630-640; A', 642-785 <VIK2>
A; Residues: 630-640; A', 642-785; NID:g29951; PIDN:CAA34278.1; PID:g133501
A; Cross-references: EMBL:X16158; NID:g29951; PIDN:CAA34278.1; PID:g1335024
PIDN:CAA34283.1; PID:g1335023; PIDN:CAA34284.1; PID:g1335024
R; Bogaert, R.; Tiller, G.E.; Weis, M.A.; Gruber, H.E.; Rimoin, D.L.; Cohn
J. Biol. Chem. 267, 22522-22526, 1992
A; Title: An amino acid substitution (Gly853-->Glu) in the collagen alpha
A; Reference number: A44309; MUID:93054548; PMID:1429602
A; Accession: A44309
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A; Residues: 171-172, 'C', 174-175 < ALA>
A; Residues: 171-172, 'C', 174-175 < ALA>
A; Note: mutant sequence from a family with family with primar R; Diab, M.; Wu, J.J.; Eyre, D.R.
Biochem. J. 314, 327-332, 1996
A; Title: Collagen type IX from human cartilage: a structural A; Reference number: S64673; MUID:96195147; PMID:8660302
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A;Title: An RNA-splicing mutation (G+5IVS20) in the type A;Reference number: I38867; MUID:95IS0028; PMID:7847372
A;Accession: I38867
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A; Residues: 440, 'G', 442-456, 'E', 458-480, 'P', 482-509
A; Cross-references: EMBL:UI5195; NID:g557053; PIDN:
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A;Residues: 188-189, X',191-195;1224-1230,'X',1232-1236 <DIA>
R;Franc, S.; Marzin, E; Boutillon, M.M.; Lafont, R.; Lechene
Eur. J. Biochem. 234, 125-131, 1995
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A;Residues: 501-676,'A',678-783,'A',785-831,'PA',834,'F',836-1214 <RAM>
A;Cross_references: EMBL:X13783; NID:g30037; PIDN:CAA32030.1; PID:g9300
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E.; Weis, M.A.; Polumbo, P.A.; Gruber, H.E.;
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PIDN:AAB60370
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collagen alpha 1(II) chain precursor (long C;SpecLes: Mus musculus (house mouse) C;Date: 28-May-1992 #sequence_revision 28-MC;Accession: B41182
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B41182
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A:Note: this translation is not annotated in GenBank entry HUMCCT2A, release 11.0
A:Note: the codons given for 133-Lys (AGG) and 1350-Gly (GCA) are inconsistent wit
R:Sangiorgi, F.O.; Benson-Chanda, V.; de Wet, W.J.; Sobel, M.E.; Tsipouras, P.; Ram
Nucleic Acids Res. 13, 2207-2225, 1985
A:Title: Isolation and partial characterization of the entire human pro alpha 1(II)
A:Reference number: 137249; MUID:85215609; PMID:2987845
A:Accession: S59491
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A; Residues: 7-28 <SAN2>
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A; Residues: 7-28; 'R', 99-114; 541-578; 786-802; 1055-1056; 'N', 1058-1068, 'T', 1070-1109; 1200-1
A; Accession: I84453
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A; Residues: 1296-1358 <NUN2>
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A; Residues: 894-909, 'PE' <STR2>
A; Cross-references: GB: K01785; NID: g30035; PIDN: CAA25082.1; PID: g
R; Nunez, A.M.; Francomano, C.; Young, M.F.; Martin, G.R.; Yamada,
Biochemistry 24, 6343-6348, 1985
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A; Residues: 1245-1295 <STR1>
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A;Accession: A21733
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A;Accession: A57033
A;Molecule type: protein
A;Residues: 'XE',1244-1246,'N',1248,'X',1250-1265;1295-1305;1395-1408
A;Rote: chondrocalcin identified as released collagen 1(II) chain carb
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A;Title: Chondrocalcin is identical with the C-propeptide of A;Reference number: A57033; MUID:87099927; PMID:3800925
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A; Residues: 541-560 <SAN3>
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                                                                       A;Cross-references: GB:M67507; NID:g159648; PIDN:AAA18014.1; PID:g159649 C;Genetics:
A;Introns: 229/3; 266/3; 305/3; 360/3; 424/1; 489/1; 548/1; 656/3; 790/1; C;Superfamily: collagen alpha 1(IV) chain C;Keywords: alternative splicing; basement membrane; cell binding; coiled
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
S16366
F;1-26/Domain: signal sequence #status predicted <SIG>F;27-1763/Product: collagen alpha 2(IV) chain #status predicted \cdotF;27-42/Domain: non-collagenous NH1 #status predicted \cdot
                                                                                                                                                                                                         A; Molecule type: mRNA
A; Residues: 1-1763 <JBI>
                                                                                                                                                                                                                                                           A; Reference number: A; Accession: S16366
                                                                                                                                                                                                                                                                                   A; Title: The complete primary A; Reference number: S16366; MI
                                                                                                                                                                                                                                                                                                                                  J. Biol.
                                                                                                                                                                                                                                                                                                                                     R; Pettitt, J.; Kingston, J. Biol. Chem. 266, 1614
                                                                                                                                                                                                                                                                                                                                                                                     C; Accession: S16366
                                                                                                                                                                                                                                                                                                                                                                                                               C; Date: 04-Dec-1992 #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                                                                                          C; Species: Ascaris
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Matches 11
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Best Local S
Matches 12
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                                                                                                                                                                                                                                                                                                                                                                                                                                    2(IV) chain precursor -
aris suum (pig roundworm)
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16149-16156, 1991

pig roundworm

04-Dec-1992 #text_change

ry structure of MUID:91340768;

a nematode alpha-2(IV)
PMID:1714907

collagen

and

the pa

predicted

891/1; 963/ coil;

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A;Status: preliminary; not compared with conceptual translation
A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-1487 <MET>
A;Cross-references: GB:M65161
C;Superfamily: collagen alpha I(I) chain; fibrillar collagen carboxyl-terminal homolo
C;Superfamily: collagen alpha I(I) chain; fibrillar collagen carboxyl-terminal homolo
C;Keywords: alternative splicing; coiled coil; extracellular matrix; glycoprotein; tr
F;33-91/Domain: von Willebrand factor type C repeat homology <MCC>
F;1259-1487/Domain: fibrillar collagen carboxyl-terminal homology <FCC>
                                                                                                                                               A; Molecule type: mRNA
A; Residues: 1-1486 <SUA>
A; Residues: 1-1486 <SUA>
A; Cross-references: GB:M63595
A; Cysperfamily: collagen alpha 1(I) chain; fibrillar collagen carboxyl-terminal homolo C; Keywords: coiled coil; extracellular matrix; glycoprotein; trimer; triple helix F; 37-96/Domain: von Willebrand factor type C repeat homology <VWC>
F; 1258-1486/Domain: fibrillar collagen carboxyl-terminal homology <FCC>
                                                                                                                                                                                                                                                                                                                                                                          R;Su, M.W.; Suzuki, H.R.; Bieker, J.J.; Solursh, M.; Ramirez, J. Cell Biol. 115, 565-575, 1991
A;Title: Expression of two normallelic type II procollagen gen A;Reference number: A40333; MUID:92011898; PMID:1918153
A;Accession: B40333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    collagen alpha 1(II) chain precursor - African clawed frog
C;Species: Xenopus laevis (African clawed frog)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R; Metsaeranta, M.; T
J. Biol. Chem. 266,
A; Title: Mouse type
                                                                                                                                                                                                                                                                                                                                                 A; Status: preliminary
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es 11; Conserv
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12; Conser
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GTPGPQGIAGQRGVV
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,16862-16869, 1991
I collagen gene. Complete nucleotide
: A41182; MUID:91358489; PMID:1885613
                                                                              85.0%;
73.3%;
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Pred. No.
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                                                                                                       Score 68;
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A; Molecule type: mRNA
A; Molecule type; mRNA
A; Residues: 1-26,'QT',29,'S',31-32,'LM',35-561,'L',563-578,'P',580-618
A; Cross-references: EMBL:M95610; NID:g1054872
R; Dlab, M.; Wu, J.J.; Eyre, D.R.
Biochem. J. 314, 327-332, 1996
A; Title: Collagen type IX from human cartilage: a structural profile of A; Reference number: S64673; MUID:96195147; PMID:8660302
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F:197-199/Region: cell attachment (R-G-D) motif
F:1530-1763/Domain: carboxyl-terminal nonhelical, NC1 #status predicted
F:1530-1638/Domain: repeat NC1 #status predicted <NC11>
F:1639-1763/Domain: repeat NC1 #status predicted <NC12>
    В
                                       Qy
                                                                                                                                                                                           C;Keywords: chondroitin sulfate proteoglycan; coiled coil; extracellular F;1-114/Domain: collagenous COL3 (fragment) #status predicted <COL3> F;115-131/Domain: non-collagenous NC3 #status predicted <NC3> F;132-470/Domain: collagenous COL2 #status predicted <NC1> F;131-500/Domain: non-collagenous NC2 #status predicted <NC2> F;471-500/Domain: non-collagenous NC2 #status predicted <NC1> F;501-615/Domain: non-collagenous NC1 (fragment) #status predicted <NC1> F;120/Binding site: chondroitin sulfate (Ser) (covalent) #status predicted
                                                                                                                                                                                                                                                                                                                                                                A; Description: structural component of extracellular fibrous polymer C; Superfamily: unassigned collagens C; Keywords: chondroitin sulfate proteoglycan; coiled coil; extracellu
                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: GDB:138310;
A;Map position: 1p33-1p32.2
C;Complex: type IX collagen may
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; MoLecule type: protein
A; Residues: 123-133,'p',135-137 <DIA>
C; Comment: Prolines and lysines at the
ed_and subsequently O-glycosylated.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: EMBL:M95610; NID:g1054872
R;Peraelae, M.; Haenninen, M.; Haestbacka, J.; Vuorio, E. submitted to the EMBL Data Library, March 1993
A;Description: Molecular cloning of the human alpha-2 (IX)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEBS Lett. 319, 177-180, 1993 A:Title: Molecular cloning of the human alpha-2(IX) collagen cDNA and A:Reference number: S32436; MUID:93202262; PMID:8454052 A:Accession: S32436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R; Peraelae, M.; Haenninen, M.; FEBS Lett. 319, 177-180, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Species: Homo sapiens (man)
C;Date: 30-Sep-1993 #sequence_revision 30-Sep-1993 #text_change
C;Date: 30-Sep-1993 #sequence_revision 30-Sep-1993 #text_change
C;Accession: S32436; S34487; S46673
C;Accession: S32436; S34487; S46673
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                                                                                                                                                                                                                                                                                                                                                                                                                                     C; Complex:
C; Function:
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A; Accession: S34487
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A; Residues: 1-618 < PER1>
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Best Local S
Matches 10
    444 GPPGPRGLAGNRGV
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66.7%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                            may be a heterotrimer of one alpha 1(IX)
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                                                                                                                       Score 59;
Pred. No.
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R; Saitta, B.; Buttice,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
A; Residues: 1-32 <GRE>
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Gene Expr. 1, 29-39,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
A; Residues: 1-463 <WOO>
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10; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1991
from GB/EMBL/DDBJ
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A;Cross-references: GB:M58529; NID:g180834; PIDN:AAC41699.1; PID:R;Cross-references: GB:M58529; NID:g180834; PIDN:AAC41699.1; PID:R;Cross-references: A;Cross-reference number: S47595, 1994

A;Title: Diversity in the processing events at the N-terminus of A;Reference number: S43642; MUID:94237164; PMID:818181482

A;Accession: S43643

A;Molecule type: protein
A;Residues: 288-291, 'P', 293-294, 'X', 296-297;606, 'X', 608-617 <MOR>R;Weil, D.; Bernard, M.; Gargano, S.; Ramirez, F.
Nucleic Acids Res. 15, 181-198, 1987

A;Title: The pro alpha 2(V) collagen gene is evolutionarily related A;Reference number: A25874; MUID:87146331; PMID:3029869

A;Residues: 398-1496 <MEI>A;Residues: 398-1496 <MEI
A;Residues: 398-1496 <ME
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A;Title: Isolation of a putative collagen-like gene from a;Reference number: A32249; MUID:89149773; PMID:2537631
A;Accession: A32249
A;Gratus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R; Woodbury, D.; Benson-Chanda, V.; Ramirez, F.
J. Biol. Chem. 264, 2735-2738, 1989
A; Title: Amino-terminal propeptide of human pro-alpha2(V)
A; Reference number: A31427; MUID:89123368; PMID:2914927
A; Accession: A31427
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C;Date: 31-Jul-1989 #sequence_revision 28-Jul-1995 #text_change 31-Dec-2000
C;Accession: A31427; A54555; S43643; A25874; I55239; I59025; A25374; A30017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: preliminary; not compared with conceptual translation A;Molecule type: DNA A;Residues: 1-290 <SAI>
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C;Species: Paracentrotus lividus (common urchin)
C;Date: 17-Aug-1989 #sequence_revision 17-Aug-1989 #text_change
A; Title: Partial covalent structure of the human alpha A; Reference number: I55239; MUID:85182703; PMID:2985598
                                                                                     A; Experimental source: rhabdomyosarcoma R; Myers, J.C.; Loidl, H.R.; Stolle, C.A. J. Biol. Chem. 260, 5533-5541, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Title: Homology between alpha2(V) and alpha1(III) collagen A; Reference number: A54555; MUID:92314691; PMID:1820205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: GB:J04478; NID:g179697; PIDN:AAA51859.1; A;Experimental source: placenta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Superfamily: collagen alpha 2(I) chain; fibrillar collagen carboxyl-terminal homolo C;Keywords: colled coil; extracellular matrix; glycoprotein; trimer; triple helix
                                                                                                                                                                                    A;Cross-references: GB:X04758; NID:g29588; PIDN:CAA28454.1; A;Experimental source: rhabdomyosarcoma cell line
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  collagen alpha 2(V) chain precursor - human
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76.9%;
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M.F.; Boutillon,
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A;Description: structural component of extracellular fibrous polymer associated with cell A;Note: may play a role in controlling the lateral growth of collagen I fibrils C:Superfamily: collagen alpha 1(I) chain; fibrillar collagen carboxyl-terminal homology; C;Keywords: colled coil; extracellular matrix; glycoprotein; hydroxylysine; hydroxyprolif; 1-26/Domain: signal sequence #status predicted <SIG> F:27-125/Oproduct: collagen alpha 2(V) chain #status predicted <AMT> F:27-193/Domain: amino-terminal propeptide (uncleaved) #status predicted <AMP> F:27-108/Region: nonhelical F:40-99/Domain: von Willebrand factor type C repeat homology <VWC> F:109-186/Region: helical F:209-1225/Region: nonhelical F:209-1225/Region: cell attachment (R-G-D) motif F:107-1089/Region: cell attachment (R-G-D) motif F:104-1086/Region: cell attachment (R-G-D) motif F:107-1089/Region: cell attachment (R-G-D) motif F:1133-1135/Region: cell attachment (R-G-D) motif F:1133-1135/Region: cell attachment (R-G-D) motif F:1225-1250/Region: cell attachment (R-G-D) motif F:1231-1496/Domain: carboxyl-terminal propeptide #status predicted CPP> F:27/Modified site: pyrrolldone carboxylic acid (Gln) (in mature form) #status predicted F:193-194/Cleavage site: Ala-Gln (procollagen carboxyl-terminal homology <PCC> F:299,1139/Modified site: 5hydroxylysine: (hys) #status predicted F:299,1139/Modified site: 6arboxylysine: (hys) #status predicted F:299,1139/Modified site: 5hydroxylysine: (hys) #status predicted F:299,1139/Modified Site: 6arboxylosine: (hys) #status predicted F:299,1139/Modified Site: 6arboxylosine: (hys) #status predicted F:299,1139/Modified Site: 6arbo
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A; Residues: 1449-1463, /E', 1465-1495, 'A' <TSI>
A; Residues: 1449-1463, /E', 1465-1495, 'A' <TSI>
A; Cross-references: GB:J03051; NID:g179695; pIDN:AAA51858.1; PID:g179696
A; Note: the authors translated the codon GAA for residue 1460 as Gln, and C; Comment: Prolines and lysines at the third position of the tripeptide rare 5-hydroxylated, and subsequently O-glycosylated.
C; Comment: The amino-terminal propeptide domain appears not to be complet C; Genetics:
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A;Introns: 33/1; 812/3; 830/3; 848/3; 884/3; 902/3; 922/3; 974/3; 1046/3; 1064/3; 1448/C;Complex: type V collagen may be a homotrimer of alpha 1(V) chains (see PIR:CGHUIV), a alpha 2(V) chain and one alpha 3(V) chain, initially linked by disulfide bonds among the ength, is formed with desmosine cross-links made from lysine and allysine residues C;Function:
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A;Note: part of this sequence were determined by protein sequencing
A;Note: part of this sequence were determined by protein sequencing
B;Note: Didli, H.R.; Seyer, J.M.; Dion, A.S.
J. Biol. Chem. 260, 11216-11222, 1985
A;Title: Complete primary structure of the human alpha-2 type V procolla
A;Reference number: A25374; MUID:85289337; PMID:2411731
A;Accession: A25374
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PMID:3224983
    (covalent)
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Dev. Dyn. 195, 113-120, 1992
A;Title: Localization of pro-alpha 2(V) collagen transcripts
A;Reference number: I49607; MUID:93214071; PMID:1297453
A;Accession: I49607
A;Status.
                                                                                                                                                                                                                                                                                                                                                                 collagen alpha 1(III) chain - chicken (fragment) C;Species: Gallus gallus (chicken) C;Date: 13-Sep-1996 #sequence_revision 13-Sep-19: C;Accession: I50696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Gene: Col5a-2
C;Superfamily: collagen alpha 1(I) chain; fibrillar collagen carboxyl-terminal
F;39-98/Domain: von Willebrand factor type C repeat homology <VWC>
F;1270-1497/Domain: fibrillar collagen carboxyl-terminal homology <FCC>
                                                                                                                                             A; Gene: COL3A1
C; Superfamily:
                                                                                                                                                                                                                                                                            A; Reference number: A54041; A; Accession: I50696
                                                                                                                                                                                                                                                                                                               R; Nah, H.D.; Niu, Z.; Adams, S.L. J. Biol. Chem. 269, 16443-16448, 19 A; Title: An alternative transcript
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                procollagen type V alpha 2 - mouse
C;Species: Mus musculus (house mouse)
C;Date: 02-7ul-1996 #sequence_revision
C;Accession: I49607
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I49607
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                                                                                                                                                                                                                      A; Molecule type: mRNA
A; Residues: 1-310 <NAH>
                                                                                                                                                                                                 A;Cross-references: EMBL:U07974; NID:g520456; PIDN:AAA83409.1; PID:g537433
                                                                                                                                                                                                                                                         A; Status: preliminary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Cross-references: GB:L02918; NID:g309180; PIDN:AAA37440.1;
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A; Residues: 1-1497 <R
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P02457;
21_JUL_1986 (Rel. 01, 0
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CARBOHYD
MOD_RES
                                                        SEQUENCE OF 1-153 FROM N.A.
MEDLINE-88056316; PubMed=3678034;
Finer M.H., Boedtker H., Doty P.;
"Construction and characterization of of the chicken pro alpha 1(I) collagen Gene 56:71-78(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PIR;
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 MEDLINE=88007542; P
Finer M.H., Aho S.,
                              SEQUENCE OF 1-144
                                                                                                                                                              NCBI_TaxID=9031;
                                                                                                                                                                                           Archosauria;
                                                                                                                                                                                                          Eukaryota;
                                                                                                                                                                                                                        Gallus gallus (Chicken)
                                                                                                                                                                                                                                       Collagen alpha COL1A1.
                                                                                                                                                                                                                                                                                                                                               CHICK
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InterPro; IPR001007; VWF_C.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUBUNIT: TRIMERS OF ONE ALPHA 2(I) AND TWO ALPHA 1(I) CHAINS TISSUE SPECIFICITY: FORMS THE FIBRILS OF TENDON, LIGAMENTS A BONES. IN BONES THE FIBRILS ARE MINERALIZED WITH CALCIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          J. Blochem. 30:163-168(1972).
FUNCTION: TYPE I COLLAGEN IS A MEMBER OF
(FIBRILLAR FORMING COLLAGEN).
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Collagen; Pyrrolidone carboxylic acid.
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EMBL; V00401; CAA23695.1; --
EMBL; M10571; AAA48671.1; A
EMBL; M17607; AAA48672.1; --
PIR; A27179; A27179.
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ProDom; PD000007; Clg_helix; 2. ProDom; PD002078; Fib_collagen_C; SMART; SM00038; COLFI; 1. SMART; SM00214; VWC; 1.
                                                                                   Pfam; PF01410; COLFI; 1. Pfam; PF01391; Collagen; 18 Pfam; PF00093; vwc; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Sequence determination and analysis of the 3' region of chicken p alpha 1(I) and pro-alpha 2(I) collagen messenger ribonucleic acids including the carboxy-terminal propeptide sequences.";
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                                                                                                                                             InterPro; IPR000087; Collagen.
InterPro; IPR000885; Fib_collagen_C
InterPro; IPR001007; VWF_C.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zyre D.R., Glimcher M.J.;
"Evidence for a previously undetected sequence at of the alpha 1 chain of chicken bone collagen.";
of the alpha 1 chain of chicken bone collagen.";
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MEDLINE=72243016; Pub
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                                                                                                                                                                                                                                                                                                                                                                                                                                                s SWISS-PROT entry is copyright. It is produced through ween the Swiss Institute of Bioinformatics and the E European Bioinformatics Institute. There are no rest by non-profit institutions as long as its content
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SUBUNIT: TRIMBES OF ONE ALPHA 2(1) AND TWO ALPHA TISSUE SPECIFICITY: FORMS THE FIBRILS OF TENDON, BONES. IN BONES THE FIBRILS ARE MINERALIZED WITH
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01-JUL-1989 (Rel. 11, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Collagen alpha 1(I) chain precursor.
COLIA1 OR COLA1.
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                                                                                                                                    Monson J.M., McCarthy B.J.; "Identification of a Balb/c mouse evidence for insertions or deletic
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"DNA sequence analysis of a mouse pro alpha
evidence for a mouse B1 element within the g
Mol. Cell. Biol. 2:1362-1371(1982).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  French B.T., Lee W.-H., Maul G.G.; "Nucleotide sequence of a cDNA clone collagen protein.";
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[2]
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"The complete cDNA coding sequence
of type I procollagen.";
Matrix Biol. 14:593-595(1995).
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
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SIGNAL
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                       SEQUENCE OF 1442-1453
MEDLINE=88124276; Pubr
                                                                                                                                                                                                                      SEQUENCE OF 735-878 AND 1005-1058 MEDLINE=83157109; PubMed=6219867;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-86137403;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Extracellular
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                                                                                                            1:59-69(1981).
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39:311-312(1985).
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37403; PubMed=3841523;
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llarity 100.0%;
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                       1453 FROM N.A.
PubMed=3340560;
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COLLAGEN ALPHA 1(1) CHAIN.
C-TERMINAL PROPEPTIDE.
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PYRROLIDONE CARBOXYLIC ACID.
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-> H (IN REF. 6).
3BC6152134271F4D CRC64;
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CONFLICT
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                                                                                                                                                                                                                                                               DOMAIN
CARBOHYD
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PIR; ;
MGD; 1
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PROSITE; PS50184; VWFC_2; 1.
Extracellular matrix; Connective tissue; Repeat; Hydroxylation;
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Pfam; PF01391; Collagen; 18.
ProDom; PD000007; C1g_helix; 1.
ProDom; PD002078; Fib_collagen_C;
SMART; SM00038; COLFI; 1.
SMART; SM00214; VWC; 1.
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InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -!- SUBUNIT: TRIMERS OF ONE ALPHA 2(I) ANI
-!- TISSUE SPECIFICITY: FORMS THE FIBRILS
BONES. IN BONES THE FIBRILS ARE MINERA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Two mrNAs of mouse pro alpha 1(1) collagen gene differ in the size of the 3'-untranslated region.";
Nucleic Acids Res. 16:773-773(1988).
-!- FUNCTION: TYPE I COLLAGEN IS A MEMBER OF GROUP I COLLAGEN
                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                   PROPEP
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between the Swiss Institute of Bioinformatics and the EMBL
the European Bioinformatics Institute. There are no restrict
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-i- PTM: Prolines at the third position of the tripeptide repeating unit (G-X-Y) are hydroxylated in some or all of the chains.

-i- SIMILARITY: Contains 1 VWFC domain.
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rPro; IPR000087; Collagen.
rPro; IPR000885; Fib_collagen_C.
rPro; IPR001007; VWF_C.
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; K03035; AAA37332
; S57243; S21626.
936 GTPGPQGIAGQRGVV
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                                                                                               Similarity
                         GTPGPQGIAGQRGVV
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AAA37332.1;
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CAA33904.1;
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NONHELICAL REGION (C-TERMINAL).

N-LINKED (GLCNAC. . .) (POTENTIAL).

N-LINKED (GLCNAC. . .) (POTENTIAL).

CELL ATTACHMENT SITE (POTENTIAL).

CELL ATTACHMENT SITE (POTENTIAL).

A -> V (IN REF. 5).
                                                                              0;
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                                                                            Score 80; DE
Pred. No. 0.0
0; Mismatches
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COLLAGEN ALPHA 1(I) CHAIN.
CARBOXYL-TERMINAL PROPEPTIDE.
                                                                                                                                                                                                                                                                                                                        VWFC.
NONHELICAL REGION (N-TERMINAL)
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Best Local
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SEQUENCE
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Pfam; PF01391; Collagen; 18.

ProDom; PD000007; C1g_helix; 2.

ProDom; PD002078; Fib_collagen_C;

SMART; SM00038; COLFI; 1.

SMART; SM00214; VWC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Campbell B.G., Wootton J.A.M., McLeod J.N., Mi
"Sequence of normal canine COLLAI cDNA.";
Submitted (MAY-1999) to the EMBL/GenBank/DDBJ
-I-FUNCTION: TYPE I COLLAGEN IS A MEMBER OF C
(FIBRILLAR FORMING COLLAGEN).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   modified and this statement is not removed, entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sanotation
30-MAY-2000 (Rel. 39, Last anotation
Collagen alpha 1(I) chain precursor.
                                                                                                                                                                                                                                                              DOMAIN
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                                                                                                                                                                                                                                                                                                                                                                             Glycoprotein;
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InterPro; IPR000885; Fib_collagen_C.
InterPro; IPR001007; VWF_C.
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European Bioinformatics Institute. There are no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUBUNIT: TRIMERS OF ONE ALPHA 2(1) AND TWO ALPHA 1(1) CHAINS PTM: Prolines at the third position of the tripeptide repeat: unit (G-X-Y) are hydroxylated in some or all of the chains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY: Contains 1 VWFC domain.
                                                                               943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SWISS-PROT entry is copyright. It is produced through sen the Swiss Institute of Bioinformatics and the EN
                                                                                                                                        Similarity
15; Conser
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PS50184; VWFC_2; 1.
lular matrix; Connective tissue; Repeat;
                                                                               GTPGPQGIAGQRGVV
                                                                                                          GTPGPQGIAGQRGVV
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NONHELICAL REGION (C-TERMINAL).

CELL ATTACHMENT SITE (POTENTIAL).

CELL ATTACHMENT SITE (POTENTIAL).

N-LINKED (GLCNAC...) (POTENTIAL).
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    PRT;
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Canis.
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Myers J., williams C., Ramirez F.;
"Human pro alpha 1(I) collagen gene structure reveals
conservation of a pattern of introns and exons,";
Nature 310:337-340(1984).
SEQUENCE OF 1-34 FROM N.A.
MEDLINE=85130970; PubMed=2857713;
Chu M.-L., de Wet W.J., Bernard M.P., Ramirez F.;
"Fine structural analysis of the human pro-alpha 1
Promoter structure, AluI repeats, and polymorphic t
                                                                                                                                                                                                                                                                                                                               Maekelae J.K., Raassina M., Virta
"Human pro alpha 1(I) collagen: cl
domain.";
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[5]
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"Isolation and characterization of
the alpha 1 and alpha 2 chains of P
Biochemistry 9:4699-4706(1970).
                                                                                                                                          transcriptional control of the human alpha 1(I) collagen Proc. Natl. Acad. Sci. U.S.A. 84:8869-8873(1987).
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21-JUL-1986 (Rel. 01, Created)
01-MAR-1989 (Rel. 10, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
                                                                                                                                                                                       Bornstein P., McKay J., Morishima J.K., Devarayalu s "Regulatory elements in the first intron contribute
                                                                                                                                                                                                                                     SEQUENCE OF 1-34 MEDLINE=88097389;
                                                                                                                                                                                                                                                                                                          Nucleic
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Jaenisch R.,
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Eukaryota; Metazoa;
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J. 253:919-922(1988).
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9025644; PubMed=3178743;
Kuivaniemi H., Stacey A
R., Prockup D.J.;
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M.-L., Myers J.
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W.J., Bernard M.P.,
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n skin collagen.";
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WARLAND (APPLIANCE OF THE PROPERTY OF THE PROP
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J. Biol. Chem. 262:14737-14744(1987).
                                                                                                                                                                                                                    VARIANT OI-II ARG-842.

MEDLINE-88298828; PubMed-3403550;

Lamande S.R., Dahl H.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           collagen.";
J. m(c)
                                                                                                                                  Bateman J.F., Lamande S.R., Dahl H.H., Chan D., Cole W.G.; "Substitution of arginine for glycine 664 in the collagen alpha I chain in lethal perinatal osteogenesis imperfecta. Demonstration the peptide defect by in vitro expression of the mutant cDNA."; J. Biol. Chem. 263:11627-11630(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bateman J.F., Chan D., Walkers I.D., Rogers J.G., "Lethal perinatal osteogenesis imperfecta due to arginine for glycine at residue 391 of the alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VARIANT OI-II ARG-569.
MEDLINE-87222295; Pub
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Byers P.H., Wallis G.A., Willing M.C.;
"Osteogenesis imperfects: translation of
J. Med. Genet. 28:433-442(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-88033031; PubMed-3667599; Vogel B.E., Minor R.R., Freund M., Prockop
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"Mutations in collagen genes:
'n humans.";
FASEB J. 5:2052-2060(1991).
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MEDLINE=97169389; PubMed=9016532;
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Kuivaniemi H., Tromp G., Prockop
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                                                Labhard
                                                                      MEDLINE-89218628;
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bhard M.E., Wirtz M.K., Pope F.M., Nicholls A.C., Hollister D.W. cysteine for glycine substitution at position 1017 in an alpha I) chain of type I collagen in a patient with mild dominantly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Biol.
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Autions in fibrillar collagens (types I, II, III, and XI), colladed collagen (type IX), and network-forming collagen (type IX), and network-forming collagen (type IX) and blood vesse a spectrum of diseases of bone, cartilage, and blood vesses and blood vesses and blood vesses of bone.
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MEDINE-89109573; PubMed=2913053;
Constantinou C.D., Nielsen K.B., Prockop D.J.;
"A lethal variant of osteogenesis imperfecta has a single mutation that substitutes cysteine for glycine 904 of the chain of type I procollagen. The asymptomatic mother has a unidentified mutation producing an overmodified and unstab
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Lamande S.R., Dahl H.-H.M., Cole W.G., Bateman J.F.
"Characterization of point mutations in the collage
COLIA2 genes causing lethal perinatal osteogenesis
J. Biol. Chem. 264:15809-15812(1989).
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MEDLINE=90009313; PubMed=2794057;
Starman B T ....
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"Determination of the single polyadenylation alpha 1(II) collagen gene.";
Nucleic Acids Res. 15:9499-9504(1987).
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                                     REVIEW ON VARIANTS.
MEDLINE=91184577; Pub
Kuivaniemi H., Tromp
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Nunez A.M., Kohno K., Martin G.R.
"Promoter region of the human pro
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                                                                                                  Su M.W., Benson-Chanda V., Vissing H., Ramirez F.; "Organization of the exons coding for pro alpha 1(II) propeptide confirms a distinct evolutionary history or
                                                                                                                                 MEDLINE-89233138;
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Biochem. J. 229:183-188(1985)
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"Identification of the molecular
spondyloepiphyseal dysplasia.";
Science 244:978-980(1989).
                                                                      MEDLINE-93304428; PubMed-8317498;
Koerkkoe J., Ritvaniemi P., Haataja L.,
Kivirikko K.I., Prockop D.J., Ala-Kokko
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"Single base mutation in the type II procollagen
cause of primary osteoarthritis associated with
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                       syndrome and the Stickler syndrome
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MEDLINE=92262484; PubMed=1374906;
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Proc. Natl. Acad.
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Vissing H., D'Alessio
Hollister D.W.;
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                                        "Mutation in type II procollagen (COL2A1) that for glycine alpha 1-67 and that causes cataract gerachmost. ...'
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MEDLINE=93054548; PubMed=1429602;
Begaert R., Tiller G.E., Wies M.A.,
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"Cartilage expression of a type II collagen
form of osteoarthritis associated with a mil
J. Clin. Invest. 87:357-361(1991).
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MEDLINE=97255959; PubMed=9101290;
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type I collagen alpha 2(I) glycine-586 to
osteogenesis imperfecta type IV. Detection
tal diagnosis by a chemical cleavage method.
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Lee B.;
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Collagen alpha 1(II) chain precursor i
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type II collagen mRNA encoding a cysteine in position 519
Biochem. Biophys. Res. Commun. 192:1169-1174(1993)
                                                                                                                       Mus musculus (Mouse)
Eukaryota; Metazoa;
Mammalia; Eutheria;
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SEQUENCE FROM N.A., AND ALTERNATIVE MEDLINE-91358489; PubMed-1885613; Metsaranta M., Toman D., de Crombrug
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                                                                                                                                                                                               PROPER
                                                                                                                                                             DOMAIN
DOMAIN
DOMAIN
                                                                                                                                                                                                                                    Glycoprotein; Collagen; SIGNAL 1 25
PROPEP 26 153
                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR000087; Collagen.
InterPro; IPR000885; Fib_collagen_C.
InterPro; IPR001007; VWF_C.
Pfam; PF01410; COLIFI; 1.
Pfam; PF01391; Collagen; 18.
Pfam; PF00093; VWC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; M65161; AAA68100.1; -. EMBL; X57982; CAA41047.1; -. MGD; MGI:88452; Col2al.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Biochim. Biophys. Acta 1089:241-243(1991).
-!- FUNCTION: COLLAGEN TYPE II IS SPECIFIC FOR CARTILAGINOUS
-!- SUBUNIT: TRIMERS OF IDENTICAL ALPHA 1(II) CHAINS.
-!- ALTERNATIVE PRODUCTS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Specific hybridization probes collagen mRNAs.";
                                                                                                                                                                                                                                                                                                                 SMART; SM00038; COLFI;
SMART; SM00214; VWC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=91274355; PubMed=2054384; Metsaranta M., Toman D., de Crombrugghe
                                                                                                  SEQUENCE
                                                                                                                        VARSPLIC
                                                                                                                                                                                                                                                                                       PROSITE; PS01208; VWFC_PROSITE; PS50184; VWFC_
                                                                                                                                                                                                                                                                                                                                         ProDom; PD000007; Clg_helix; 5.
ProDom; PD002078; Fib_collagen_C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entities
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                                                                                                                                                  VARSPLIC
                                                                                                                                                                                                                                                                           Extracellular matrix; Connective
                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IsoId=P28481-2; Sequence=VSP_001139, VSP_001140; PTM: Prolines at the third position of the tripeptide unit (G-X-Y) are hydroxylated in some or all of the ch SIMILARITY: Contains 1 VWFC domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Name=Short;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Name=Long;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Event=Alternative splicing; Named isoforms=2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IsoId=P28481-1; Sequence=Displayed;
                                                . Similarity
12; Conserv
GPPGPQGLAGQRGIV 955
                       GTPGPQGIAGQRGVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          requires a license agreement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ne II collagen gene. Complete nucleotide sequence,
and alternative splicing.";
hem. 266:16862-16869(1991).
                                                                                                  1459
                                                                                                                                                                           154
1214
32
173
                                                Conservative
                                                                                                                         30
                                                                                                 AA;
                                                                                                                                              1213
1459
89
1186
1213
                                                                                                                                                                                                                                                                                                     VWFC_1;
                                                                                                                           98
                                                           88.8%;
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                                                                                                                                                                                                                                                   Cartilage; Signal;
POTENTIAL.
                       15
                                                2;
                                                                                                  ĭ
                                                             Pred.
                                                                         Score 71;
                                                                                               Missing (in isoform Short).
/FTId=VSP_001140.
MW; F6C84FA7C532E7F2 CRC64;
                                                                                                                                                  Q -> R (in isoform Short).
                                                                                                                                                             TRIPLE-HELICAL REGION.
NONHELICAL REGION (C-TERMINAL).
                                                                                                                                                                                                             COLLAGEN ALPHA 1(II)
                                                                                                                                     /FTId=VSP_001139
                                                                                                                                                                                                                           (BY SIMILARITY)
                                                                                                                                                                                                                                        AMINO-TERMINAL PROPERTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for mouse
                                                ed. No. 0.0051;
Mismatches
                                                                                                                                                                                                                                                                            tissue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8.,
                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              type
                                                                                                                                                                                                                                                                            Repeat; Hydroxylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , Vuorio E
/pe I, II,
                                                                                                                                                                                                                                                                 Alternative splicing.
                                                                        Length 1459;
                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            chains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeating
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                                                0;
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                                                Gaps
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RESULT 8
CA24_ASCSU
ID CA24_ASCSU

STANDARD;

PRT;

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  VARSPLIC
                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                     CHAIN
                                                                                                                                                                                                                                                                                                                                                                SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                        SMART; SM00111; C4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "The complete primary structure of a nematode alpha 2(IV) collager and the partial structural organization of its gene.";
J. Biol. Chem. 266:16149-16156(1991).
i. FUNCTION: COLLAGEN TYPE IV IS SPECIFIC FOR BASEMENT MEMBRANES.
i. SUBUNIT: TRIMERS OF TWO ALPHA 1(IV) AND ONE ALPHA 2(IV) CHAIN.
TYPE IV COLLAGEN FORMS A MESH-LIKE NETWORK LINKED THROUGH
INTERMOLECULAR INTERACTIONS BETWEEN 7S DOMAINS AND BETWEEN NC1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P27393;
01-AUG-1992 (Rel. 23, Created)
01-AUG-1992 (Rel. 23, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
15-SEP-2003 (Rel. 42, Last annotation update)
Collagen alpha 2(IV) chain precursor.
Ascaris suum (Pig roundworm) (Ascaris lumbricoides).
Eukaryota; Metazoa; Nematoda; Chromadorea; Ascaridida; Ascaridoidea;
                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                        Alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PIR; S16366; S16366.
InterPro; IPR000087; Collagen.
InterPro; IPR001442; ProcollagnC4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; M67507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A. (ISOFORMS I AND MEDLINE=91340768; PubMed=1714907; Pettitt J., Kingston I.B.;
                                                                                                                                                                                                                                                                                                                                                                                                                Hydroxylation; Connective
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ProDom;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF01413; C4; 2.
Pfam; PF01391; Collagen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ascarididae; Asc
NCBI_TaxID=6253;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ProDom; PD000007; Clg_helix;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         European Bioinformatics Institute. The by non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ISOId=P27393-2; Sequence=VSP_001159;
DOMAIN: ALPHA CHAINS OF TYPE IV COLLAGEN HAVE A NONCOLLAGENOUS
DOMAIN (NC1) AT THEIR C-TERNINUS, FREQUENT INTERRUPTIONS OF THE
G-X-Y REPEARS IN THE LONG CENTRAL TRIPLE-HELICAL DOMAIN (WHICH N
CAUSE FLEXIBILITY IN THE TRIPLE HELIX), AND A SHORT N-TERMINAL
TRIPLE-HELICAL 75 DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PTM: Prolines at the third position of the tripeptide repeating unit (G-X-Y) are hydroxylated in some or all of the chains. PTM: Type IV collagens contain numerous cysteine residues which are involved in inter- and intramolecular disulfide bonding. 12 these, located in the NCl domain. Are conserved in 10 hours.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Name=II;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Name=I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Event=Alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ALTERNATIVE PRODUCTS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SWISS-PROT entry is copyright. It is produced through a ceen the Swiss Institute of Bioinformatics and the EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IsoId=P27393-1; Sequence=Displayed
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                                                                                                                                                                                                                                                                                                                                                                                     splicing;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAA18014.1;
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1709
                                                                                                                                                                                                                                                                                                                                                                                        Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       splicing;
                                                                                                                                                                                                                                                                                                                                                                                                                tissue;
             COLLAGEN ALPHA 2(IV) CHAIN.

75 DOMAIN.

TRIPLE-HELICAL REGION.

NONHELICAL REGION (NC1).

OR 1637 (BY SIMILARITY).

OR 1637 (BY SIMILARITY).

OR 1749 (BY SIMILARITY).

BY SIMILARITY.

OR 1752 (BY SIMILARITY).

OR 1752 (BY SIMILARITY).

BY SIMILARITY.

N-LINKED (GLCNAC. . .) (POTENTIAL).

O-LINKED (XYL. . .) (GLYCOSAMINOGLYCAN)

(IN ISOFORM II) (POTENTIAL).
GEQGPRGPQGPPGPVPSTGAKGTIIGPEGAPGMKGEK
                                                                                                                                                                                                                                                                                                                                                             POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Named isoforms=2;
                                                                                                                                                                                                                                                                                                                                                                                                           Basement membrane;
                                                                                                                                                                                                                                                                                                                                                                                   Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ong as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                           Repeat; Collagen;
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RESULTY 9
CA29_HUMAN
ID CA29_HUMAN
ID CA29_HUMAN
ID CA29_HUMAN
ID CA29_HEB
DT 28-FEB
OC GUMANN
ISUE
RX MEDLIN
RA PIHLAI
RP SEQUEN
RA DONNel
RI "Human
RT SIMILA
RA PIHLAI
RA PHLAI
RA PHLAI
RA PEBS I
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RA ANNUNE
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                        Science 285:409-412(1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Peraelae M., Hanninen M., Hastbacka J., Elima K., Vuorio E.; "Molecular cloning of the human alpha 2(IX) collagen cDNA and assignment of the human COL9A2 gene to chromosome 1."; FEBS Lett. 319:177-180(1993).
                                                                                                                                                                                                                                                                                                                                                                                                             Ryhanen L., Goering H.H.H., Ott J., Prockop D.J., A "An allele of COL9A2 associated with intervertebral
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Annunen S., Paassilta P., Lohiniva J., Karppinen J., Tervonen O., Kroeger H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE-Cartilage;
MEDLINE-93202262; PubMed-8454052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Donnelly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Human COL9A1 and COL9A2 genes. Two similar polypeptides of the same col Matrix Biol. 17:237-241(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE=Foreskin;
MEDLINE=98370844; PubMed=9707347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COL9A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sec
28-FEB-2003 (Rel. 41, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q14055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=99340300;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ala-Kokko L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Collagen alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 50-668 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ihlajamaa T.,
PTM: Prolines at the third position of the tripeptide repeating unit (G-X-Y) are hydroxylated in some or all of the chains. DISEASE: Defects in COU9A2 are a cause of multiple epiphyseal dysplasia type 2 (MED2) [MIM:600204]. MED2 is characterized by flattened, irregular epiphyses in most joints, particularly the knees. In childhood, typical features include waddling gait and knee pain/stiffness. Inheritance is autosomal dominant. DISEASE: Defects in COU9A2 are a cause of susceptibility to intervertebral disc disease (IDD) [MIM:603932], one of the most common musculo-skeletal disorders.
                                                                                                                                                                                                                                                                         PTM: Covalently linked to the
                                                                                                                                                                                                                                                                                                                                                                     FUNCTION:
                                                                                                                                                                                                                                                      lysine-derived cross-links
                                                                                                                                                                                                                                                                                                  alpha 3(IX) chain.
                                                                                                                                                                                                                                                                                                                       SUBUNIT:
                                                                                                                                                                                                                                                                                                                                            of the eye
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 82 GPPGPQGIKGDRGII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GTPGPQGIAGQRGVV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (FEB-2000) to
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRP-326, AND VARIANT A 40300; PubMed=10411504;
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                                                                                                                Boedtker H., Finer M., Aho S.;
"The structure of the chicken alpha 2
Ann. N.Y. Acad. Sci. 460:85-116(1985)
                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                  Gallus gallus (Chicken).
                                                                                                                                                                                                                                                                                                                                                                                                                                             Collagen alpha COL1A2.
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modified and this statement is not removed.
entities requires a license agreement (See |
                              SEQUENCE OF 1-89 FROM N.A. MEDLINE=83246518; PubMed=6135195;
                                                                                                                                                                                                                                       SEQUENCE OF 1-245;
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                                                                                                                                                                                                         MEDLINE=86185168; PubMed=3868961;
                                                                                                                                                                                                                                                                                              NCBI_TaxID=9031;
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Boedtker H.,
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Proc.
[12]
                                        SEQUENCE OF 566-587 FROM N.A.
MEDLINE-79074829; PubMed-364479;
Lehrach H., Frischauf A.-M., Hanahan D.,
Crkvenjakov R., Boedtker H., Doty P.;
"Construction and characterization of a :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Finer M.H., Boedtker H., Doty P.;

"Construction and characterization of cDNA clones encoding the of the chicken pro alpha 1(I) collagen mpna ".
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                                 clone.
                                                                                                                        "Isolation and characterization alpha 2 chain of chick bone colcleavage.";
                                                                                                                                                         MEDLINE=69206882; PubMed=5785233; Lane J.M., Miller E.J.;
                                                                                                                                                                                                       Biochemistry [10]
                                                                                                                                                                                                                Kang A.H., Igarashi S., Gross J.;
"Charaterization of the cyanogen
chain of chick skin collagen.";
Biochemistry 8:3200-3204(1969);
                                                                                                                                                                                                                                                                                                          "Amino acid sequence of cyanogen bromide terminal region of chick skicollagen."; Biochemistry 9:796-804(1970).
                                                                                                                                                                                                                                                                                                                                                                                          Nature
[8]
                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 74-91; 263-448 AND 1088-1169 MEDLINE-82058081; PubMed-6272119; Wozney J., Hanahan D., Tate V.E., Boedtke "Structure of the pro alpha 2 (I) collage Nature 294:129-135(1981).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Comparative studies on the amino acid sequence peptides from chick and rat skin collagens."; Biochemistry 10:610-616(1971).
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[6]
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MEDLINE=84297217; PubMed=6473103;
Aho S., Tate V.E., Boedtker H.;
"Location of the 11 bp exon in the chicken
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potential for
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Ohkubo H., Sobel M.E.,
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                     Acad. Sci. U.S.A.
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SEQUENCE OF 902-1362 FROM N.A.

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Dickson L.A., Ninomiya Y., Bernard M.P., Pesciotta D.
Green G., Eikenberry E.F., de Crombrugghe B., Vogeli
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FUNCTION: TYPE I COLLAGEN IS A MEMBER OF GROUP I (FIBRILLAR FORMING COLLAGEN).

SUBUNIT: TRIMERS OF ONE ALPHA 2(I) AND TWO ALPHA TISSUE SPECIFICITY: FORMS THE FIBRILS OF TENDON,
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                                                                                                         SEQUENCE OF 398-1496 FROM N.A. MEDLINE=87146331; PubMed=3029669; Weil D., Bernard M.P., Gargano S., R. "The pro alpha 2(V) collagen gene is major fibrillar-forming collagens."; Nucleic Acids Res. 15:181-198(1987).
                                                                                                                                                                                                                                                                                SEQUENCE OF 1-463 FROM N.A.

SEQUENCE OF 1-463 FROM N.A.

MEDLINE=89123368; PubMed=2914927;

Woodbury D., Benson-Chanda V., Ramirez F.;

Woodbury D., Benson-Chanda V., Ramirez F.;

"Amino-terminal propeptide of human pro-alpha 2(Y) collagen conforms to the structural criteria of a fibrillar procollagen molecule.";

J. Biol. Chem. 264:2735-2738(1989).
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InterPro; IPR000885; Fib_collagen_C.
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Pfam; PF01410; COLFI; 1.
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Collagen alpha 2(V) chain precursor.
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               Loidl
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AAA51611.
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; NOT_ANNOTATED_CDS.
; NOT_ANNOTATED_CDS.
; NOT_ANNOTATED_CDS.
; NOT_ANNOTATED_CDS.
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8; Fib_collagen_C;
COLFI; 1.
PubMed=2411731;
1 H.R., Seyer T W
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Primates;
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               Seyer J.M.,
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'Craniata; Vertebrata; Catarrhini; Hominidae;
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               Dion A.S.;
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use by non-profit institutions as long modified and this statement is not removed: entitles requires a license agreement (See or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Complete primary structure of the human alpha 2 type V procollagen COOH-terminal propeptide.";
                                                                                                                                                                                                                                                                                                                                                           Richards A.J., Martin S., Nicholls A.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-94237164; PubMed-8181482;
Moradi-Ameli M., Rousseau J.C., Kleman J.P., Champliaud M.F.,
Boutillon M.M., Bernillon J., Wallach J.M., van der Rest M.;
"Diversity in the processing events at the N-terminus of type-V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=92239022;
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MEDLINE-89138450; PubMed-3224983;
Tsipouras P., Schwartz R.C., Liddell
                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=98455031; PubMed=9783710;
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Benomics 3:275-277(1988).
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I- FUNCTION: TYPE V COLLAGEN IS A MEMBER OF GROUP I COLLAGEN

I- FUNCTION: TYPE V COLLAGEN). IT IS A MINOR CONNECTIVE TISSUE

TORRATING COLLAGEN). TYPE V COLLAGEN!
                                                                                                                                                                                                                                                                                                                                         single
                                                                       European Bioinformatics Institute.
; J04478;
; X04758;
                                                                                 SWISS-PROT entry is copyright. It is produced through sen the Swiss Institute of Bioinformatics and the EN
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                                                                                                                                                                                                                                                                                                                                            base
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. 260:11216-11222(1985).
         AAA51859.1;
                                                                                                                                                                                                                                                                                                                                           mutation
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chromosome
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                                                                                                                                                                                                                                                                                                                                                               Harrison J.B.,
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RESULT 13
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Best Local
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P13941; 070604;
D1-JAN-1990 (Rel. 13, Created)
01-JUN-1994 (Rel. 29, Last sequence up
16-OCT-2001 (Rel. 40, Last annotation
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MOD_RES
SEQUENCE FROM N.A.

MEDLINE-94114571; PubMed-8286415;
Glumoff V., MacKelae J.K., Vuorio E.;
"Cloning of cDNA for rat pro alpha 1(III) collagen mRNA.
"Cloning of cDNA for fype I and type III collagen and fygenes in experimental granulation tissue.";
Biochim. Biophys. Acta 1217:41-48(1994).
                                                                                                                                                                 Eukaryota; Metazoa;
Mammalia; Eutheria;
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SMART; SM00214; VWC; 1
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ProDom; PD002078; Fib_collagen_C;
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PF01391; Collagen; 18
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IPR000885; Fib_collagen_C.
IPR001007; VWF_C.
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G -> R (1n EDS-II).
/FIId=VAR_013588.
A -> P (IN REF. 6).
K -> T (IN REF. 3).
F -> S (IN REF. 3).
E -> Q (IN REF. 4).
V -> A (IN REF. 4).
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Pred. No. 0.47
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CARBOXYL-TERMINAL P
VWFC.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       82827C17A8644F5A
                                                                                                                                                                                                                                                                                update)
                                                                                                                                                                                                                                                                                                                                   636
                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1
                                                                                                                                                                                                                                                                                                                                     A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
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RESULT
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Best Local
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P04258;
20-MAR-1987 (Rel. 0
20-MAR-1987 (Rel. 0
16-OCT-2001 (Rel. 4
Collagen alpha 1(II
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                [2]
SEQUENCE OF 73-636 FROM N.A.
STRAIN-Sprague-Dawley; TISSUE-Fibroblast;
Wurtz T., Ellerstroem C., Lundmark C., Christe
Wurtz T., Ellerstroem t., Lundmark C., Christe
Submitted (APR-1998) to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DISULFID
DISULFID
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF01410; COLFI; 1.

Pfam; PF01391; Collagen; 6.

ProDom; PD000007; C1g_helix; 1.

ProDom; PD002078; Fib_collagen_C;

SMART; SM00038; COLFI; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNAs by estradiol in the in DNA 7:347-354(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROPEP
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; X70369; CAA49832.1; -.
EMBL; AJ005395; CAA66510.1;
EMBL; M21354; AAA40942.1; -.
PIR; S41067; S41067.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This
                                                                                                                                                                                       CA13_BOVIN
                                                                                                                                                                                                                BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Extracellular matrix;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR000087; Collagen.
InterPro; IPR000885; Fib_collagen_C.
InterPro; IPR001007; VWF_C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Frankel F.R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=88296083;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 308-482 FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALSO CROSS-LINKED VIA HYDROXYLYSINES.
PTM: Prolines at the third position of the tripeptide repeating unit (G-X-Y) are hydroxylated in some or all of the chains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ALONG WITH TYPE I COLLAGEN.
SUBUNIT: TRIMERS OF IDENTICAL ALPHA 1(III) CH
LINKED TO EACH OTHER BY INTERCHAIN DISULFIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В.,
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9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MO0038; COLL PARITOR
PS01208; VWFC_1; PARITOR
PROTICIN; Connective
                                                                                                                                                                                                                                                                                                                                                                                           GTPGPQGIAGQRG
                                                                                                                                                                                                                                                                                                                                   GPPGPQGVKGERG
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429
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376
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ΑA;
                                                                                                                                                                                    STANDARD;
                                                           04,
04,
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                           Created)
Last sequence upor Last annotation of the contraction of the 
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69.2%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COLLAGEN ALPHA 1(III) CHAIN.
CARBOXYL-TERMINAL PROPERTIDE.
TRIPLE-HELICAL REGION.
NONHELICAL REGION (C-TERMINAL).
INTERCHAIN (BY SIMILARITY).
INTERCHAIN (BY SIMILARITY).
N -> D (IN REF. 2).
A -> G (IN REF. 2).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 0.3
Pred. No. 0.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61A48159F01D01EE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tissue; Repeat; Hydroxylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rat
                                                                                                                                                                                    1049
                                                              update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Christersson C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lin
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 636
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lyttle
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     THE CHAINS
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acid
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                                                                                                                                                                                                 HOPPE Seyler's Z. Physiol. Chem. 360:861-868(1979).

-!- FUNCTION: COLLAGEN TYPE III OCCURS IN MOST SOFT CONNECTIVE TISSUES ALONG WITH TYPE I COLLAGEN.

-!- SUBUNIT: TRIMERS OF IDENTICAL ALPHA 1(III) CHAINS. THE CHAINS ARE LINKED TO EACH OTHER BY INTERCHAIN DISULFIDE BONDS. TRIMERS ARE
                                                                                                                                                                                                                                                       "The covalent structure of calf skin type III collacid sequence of the carboxyterminal cyanogen brom. 1(III)CB9B (positions 928-1028).";
Hoppe-Seyler's z. physical
                                                    Glycoprotein;
                                                               ProDom; PD000007; Clg_helix; 3. PROSITE; PS01208; VWFC_1; PARTIAL Extracellular matrix; Connective
                                                                                                       InterPro; IPR000087; Collagen.
InterPro; IPR001007; VWF_C.
Pfam; PF01391; Collagen; 17.
                                                                                                                                              ALSO CROSS-LINKED VIA HYDROXYLYSINES.
-i- PTM: Prolines at the third position cunit (G-X-Y) are hydroxylated in some PIR: A02862; CGB07S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=80026027; PubMed=488907;
Dewes H., Fietzek P.P., Kuhn K.;
"The covalent structure of calf skin type III collagen. II.
acid seguence of the cyanogen bromide peptide alpha 1(III)Cl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 1-242.
MEDLINE=80026026; PubMed=488906;
Fietzek P.P., Allmann H., Rauter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bos taurus (Bovine).
Eukaryota; Metazoa; Ch
Mammalia; Eutheria; Ce
Bovidae; Bovinae; Bos.
               DOMAIN
                          DOMAIN
                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 948-1049
                                                                                                                                                                                                                                                                                                                                                                                                                  Dewes
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                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hoppe-Seyler's Z.
[5]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tang H., Glanville R.W., Fietzek P.P., Kuhn K.;
"The covalent structure of calf skin type III c
acid sequence of the cyanogen bromide peptide a
(positions 552-788).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=80026029; PubMed=488909;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kuhn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                        MEDLINE=80026031; PubMed=488911;
                                                                                                                                                                                                                                                                                                                                                              Hoppe-Seyler's
                                                                                                                                                                                                                                                                                                                                                                          (position
                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 809-947.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 572-808.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hoppe-Seyler's Z. Physiol. Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        amino acid sequence of the cyanogen (positions 403-551).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bentz H., Fietzek P.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=80026028;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (positions 223-402).";
Hoppe-Seyler's Z. Physiol. Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 243-422.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hoppe-Seyler's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      acid sequence of the amino (positions 1-222).";
                                                                                                                                                                                                                                                                                                                                                                                    INE-80026030; PubMed=488910;

s H., Fietzek P.P., Kuhn K.;

covalent structure of calf skin type III collagen. V. The

sequence of the cyanogen bromide peptide alpha 1(III)CB9A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  covalent structure of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  covalent
                                                                                                                                                                                                                                                                                                                                                                          789-927)
                                                   Collagen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 structure
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 1040
1049
95
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Physiol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chordata; Craniata; Vertebrata; Euteleostomi; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kuhn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of
                                                                              PARTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rauterberg J.,
                                                                                                                                                                                                                                                                                                                                                              Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hn K.;
calf skin type III collagen. III. The
calf skin type peptide alpha 1(III)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 calf skin type :
terminal region
NONHELICAL REGION (N-TERMINAL).
TRIPLE HELICAL REGION.
NONHELICAL REGION (C-TERMINAL).
HYDROXYLATION.
                                                                 tissue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360:833-840(1979)
                                                                                                                                                                                                                                                                                                                                                              360:851-860(1979).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360:821-832(1979).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360:841-850(1979).
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                                                                                                                                                             some
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                                                                  Repeat; Hydroxylation
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alpha 1(II
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                                                                                                                                                                                                                                                                                             collagen.
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CARBOHYD
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  entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                              Nucleic Acids Res. 11:2733-2744(1983).

-!- FUNCTION: COLLAGEN TYPE III OCCURS IN MOST SOFT CONNECTIVE TISSIALONG WITH TYPE I COLLAGEN.
-!- SUBUNIT: TRIMERS OF IDENTICAL ALPHA 1(III) CHAINS. THE CHAINS AND LINKED TO EACH OTHER BY INTERCHAIN DISULFIDE BONDS. TRIMERS ARE ALSO CROSS-LINKED VIA HYDROXYLYSINES.
-!- PTM: Prolines at the third position of the tripeptide repeating unit (G-X-Y) are hydroxylated in some or all of the chains.
-!- SIMILARITY: Contains 1 VMFC domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CA13_CHICK STANDARD; PRT; 1262 AA. P12105; P79758; P79759; Q90794; Q92029; Q1-OCT-1989 (Rel. 12, Created) 16-OCT-2001 (Rel. 40, Last sequence update) 28-FEB-2003 (Rel. 41, Last annotation update) Collagen alpha 1(III) chain precursor (Fragments).
                                                                                                                                                                                                                                                                       SEQUENCE OF 977-1262 FROM N.A. MEDLINE=83220816: PubMed=6856474; Yamada Y., Kuhn K., de Crombrugghe B.;
                                                                                                                                                                                                                                                                                                               Nature
[3]
                                                                                                                                                                                                                                                                                                                                                                                                                 Nah H.-D., Niu Z., Adams S.L.;
"An alternative transcript of the chick type does not encode type III collagen.";
J. Biol. Chem. 269:16443-16448(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHICK
                                                                                                                                                                                                                                 propeptide, is genes.";
                                                                                                                                                                                                                                                                                                                          two chick collagen genes."; Nature 310:333-337(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Collagen alpha COL3A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                             "A conserved nucleotide sequence, coding i
propeptide, is found at the same location
                                                                                                                                                                                                                                                                                                                                                   Yamada Y., Liau G., Mudryj M., Obici S., de Crombrugghe B.; "Conservation of the sizes for one but not another class of exons
                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 29-96; 332-397; 431-484; MEDLINE=84270696; PubMed=6547770;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-94266842; PubMed-8206952;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 1-886 FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Archosauria; Aves;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gallus gallus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=9031;
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tazoa; Chordata;
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O-LINKED (GAL.
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; Galliformes; Phasianidae; Phasianinae;
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DISULFID
DISULFID
                  VOLIGAT.
COLJAT.
Mus musculus (Mouse).
Nus musculus (Mouse).
Narvota; Metazoa; Chordata;
Narvota; Rodentia;
                                                           MOUSE STANDARD; PRT; 14
CA13_MOUSE STANDARD; PRT; 14
P08121; Q61429; Q9CRN7;
101-AUG-1988 (Rel. 08, Created)
15-JUL-1999 (Rel. 38, Last sequence up
15-SEP-2003 (Rel. 42, Last annotation
Collagen alpha 1(III) chain precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL;
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EMBL;
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PROSITE; PS50184; VWFC_2; 1.
Extracellular matrix; Connective tissue;
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SMART; SM00214; VWC; 1.
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ProDom; PD002078; Fib_collagen_C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR000087; Collagen.
InterPro; IPR000885; Fib_collagen_C
InterPro; IPR001007; VWF_C.
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SEQUENCE FROM N.A
                NCBI_TaxID=10090;
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I50694; I50694
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X00823; CAB52686.1;
X00826; CAA25397.1;
X00825; CAA25397.1;
X00827; CAA25398.1;
X00828; CAA25399.1;
                                                                                                                                                       851
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M36662; AAA18519.1;
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X00831; CAA25402.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            K02302; AAD15299.1;
                                                                                                                                                                                         Similarity 69.3
9; Conservative
                                                                                                                                                       GPPGPQGVKGERG
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69.2%;
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                                                                                                                                                                                                                             WW;
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                                                                                                                                                                                                  Score 57;
Pred. No.
                                                                                                                                                                                                                                                              INTERCHAIN (BY SIMILARITY).
INTERCHAIN (BY SIMILARITY).
HYDROXYLATION (BY SIMILARITY).
HYDROXYLATION (BY SIMILARITY).
HYDROXYLATION (BY SIMILARITY).
                                                                                                                                                                                                                                      N-LINKED (GLCNAC. . E -> K (IN REF. 2). F -> S (IN REF. 3).
                                                                                                                                                                                                                                                                                                                                                                                           AMINO-TERMINAL PROPEPTIDE (BY SIMILARITY).
COLLAGEN ALPHA 1(III) CHAIN.
CARBOXYL-TERMINAL PROPEPTIDE
                                                                                                                                                                                                                                                                                                                               NONHELICAL REGION (C-TERMINAL) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                SIMILARITY).
TRIPLE-HELICAL
                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                  NONHELICAL
                          Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                             96ABE7B2E9DEB43D
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RC STRAINS—C57BL/GJ; TISSEE=Embryonic head;

RX MEDLINE-21085660; PubMed=11217851;

RX MEDLINE-21085660; PubMed=11217851;

RA ARAWAM J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,

RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,

RA Arakawa T., Hara A., Fukunishi Y., Konno H., Kasukawa T., Samanaka I.,

RA Arakawa T., Hara A., Fukunishi Y., Konno H., Kasukawa T., Saito R.,

RA Arakawa T., Hara A., Ashburner M., Batalov S., Casavant T.,

RA Arakawa T., Hara A., Ashburner M., Batalov S., Casavant T.,

RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,

RA Kadota K., Matsudy Y., Nikaido I., Pesole G., Quackenbush J.,

RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,

RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,

RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,

RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,

RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,

RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,

RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,

RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,

RA Blake J., Boffelli D., Bojunga N., Haraelli J., Mombaerts P.,

RA Blake J., Boffelli D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,

RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,

RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,

RA Sasaki H., Sato K., Wang K.H., Weitz C., Whittaker C., Wilming L.,

RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,

RT Functional annotation of a full-leggth mouse cond. Collection ".
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        collagen mRNAs.";
Biochim. Biophys. Acta 1089:241-243(1991).
-!- FUNCTION: COLLAGEN TYPE III OCCURS IN MOST SOFT CONNECTIVE TISSUES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 1-488 FROM N.A.

MEDILINE-88167858; PubMed-3443309;

WOOD L., Theriault N., VOgeli G.;

"Complete nucleotide sequence of the N-terminal domains of the murine alpha-1 type-III collagen chain.";

Gene 61:225-230(1987).
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MEDLINE=91274355;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nature 409:685-690(2001).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "The mouse type-III procollagen-encoding gene: genomic cloning and complete DNA sequence.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Functional annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 810-1464 FROM N.A.
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[2]
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"Identification of the promoter and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=C57BL/6 x DBA; TISSUE=Embryo;
MEDLINE=95011609; PubMed=7926795;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'Specific hybridization probes for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Toman D., de Crombrugghe
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                                                                                                                                                                                                                                                                                                                                                                                            chains.
PTM: O-linked glycan
TYPTMEN atom of a
                                                                                                                                                                                                                                                                                                                  similarity).
SIMILARITY: Contains 1 VWFC domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ALSO CROSS-LINKED VIA HYDROXYLYSINES. PTM: Proline residues at the third position repeating unit (G-X-Y) are hydroxylated in s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ALONG WITH TYPE I COLLAGEN.
SUBUNIT: TRIMERS OF IDENTICAL ALPHA 1(III) CHAINS.
LINKED TO EACH OTHER BY INTERCHAIN DISULFIDE BONDS.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Toman D., de Crombrugghe B., Vuorio E.; dization probes for mouse type I, II, III and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed=2054384;
                                                                                                                                                                                                                                                                                                                                                                                                     consists of a Glc-Gal disaccharide bound to post-translationally added hydroxyl group (By
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
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PIR;
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pfam; PF01391; Collagen; 18.
proDom; PD0000007; Clg_helix; 1.
proDom; PD002078; Fib_collagen_C;
                                                                                                                                                                                                                                                                                                                                                                                       EMBL; X52046; CAA36279.1; -.
EMBL; M1893; AAA37338.1; -.
EMBL; K03037; -; NOT_ANNOTATED_CDS.
EMBL; K0319448; BAB31724.1; -.
EMBL; X57983; CAA41048.1; -.
PIR; A27353; A27353.
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SIGNAL
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PROSITE; PS50184; VWFC_2; 1.
Extracellular matrix; Connective tissue; Repeat; Hydroxylation;
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SMART; SM00214; VWC; 1.
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                                                                                                                                                                                                                                                                                                                                           InterPro;
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 851
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                                    Similarity
9; Conser
GPPGPQGVKGERG
                GTPGPQGIAGQRG
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IPR000885; Fib_collagen_C
IPR001007; VWF_C.
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INTERCHAIN
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HYDROXYLATION (BY SIMILARITY).
                                                                                                     HYDROXYLATION
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NONHELICAL REGION (C-TERMINAL)
                                                                                                                                                                                                          CARBOXYL-TERMINAL PROPERTIDE
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COLLAGEN ALPHA
                                                                                                                                                                                      NONHELICAL REGION (N-TERMINAL)
                                    Mismatches
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(BY SIMILARITY).
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Search completed: August 29, 2003, 18:27:05 Job time: 24 secs

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Result
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Maximum Match 100%
Listing first 45 summaries
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Maximum DB seq length: 2000000000
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Perfect score:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
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Gapop 10.0 , Gapext 0.5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Copyright (c) 1993 - 2003 Compugen Ltd.
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Q9r149 cavia porce
Q99116 mus musculu
Q63079 rattus norv
Q76045 homo sapien
Q8n473 homo sapien
Q91485 oncorhynchu
Q91040 oncorhynchu
Q991b4 cynops pyrr
Q93486 oncorhynchu
Q991049 oncorhynchu
Q991049 oncorhynchu
Q8v172 cavia porce
Q9xt25 bos taurus
Q8v676 mus musculu
Q8cef7 mus musculu
Q14046 homo sapien
Q28396 equus cabal
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| | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 3 8 | 37 | 36 | ა 5 | 34 | ω | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 |
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| ALIGNMENTS | 56 | 56 | 56 | 57 | 57 | 57 | 57 | 5 7 | 57 | 57 | 58 | 58 | 58 | 58 | 58 | 60 | 60 | 63 | 64 | 64 | 68 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 |
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| | 1621 | 1366 | 690 | 1860 | 1464 | 1414 | 1222 | 998 | 832 | 310 | 1497 | 1464 | 1347 | 1258 | 290 | 441 | 100 | . 441 | 1447 | 1445 | 1486 | 1487 | 1487 | 1459 | 1442 | 1442 | 1420 | 1419 | 1418 |
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| | Q9H4R9 | Q15177 | Q8JGL8 | Q8IZC6 | Q8BLW4 | Q26634 | Q8K173 | Q8CFM4 | Q96JF7 | Q90612 | Q61431 | Q8BKY2 | 0960вз | Q8AW11 | Q26054 | Q96A84 | Q9Y3P3 | Q96A83 | Q9ІВ91 | 093251 | Q91717 | 077753 | Q14047 | Q62032 | Q62033 | Q62031 | Q90W37 | Q63123 | Q9W7R9 |
| ENTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | OMO | | brac | homo | Q8blw4 mus musculu | Q26634 strongyloce | Q8k173 mus musculu | mus | homo sa | Q90612 gallus gall | mus | 2 mus | Q96qb3 homo sapien | | para | homo | Q9y3p3 homo sapien | Þ | xeno | rana ca | Q91717 xenopus lae | cani | homo | Q62032 mus musculu | Q62033 mus musculu | mus mus | Q90w37 gallus gall | rattus | Q9w7r9 cynops pyrr |

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RESULT

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EMBL; BC003198; AAH03198.1; -.
MGD; MGI:88467; Colla1. '.
InterPro; IPR000885; Fib_collagen_C.
InterPro; IPR000885; Fib_collagen_C.
Pfam; PF01410; COLFI; 1.
Pfam; PF01391; Collagen; 6.
ProDom; PD002078; Fib_collagen_C; 1.
SMART; SM00038; COLFI; 1.
                                                                     Pfam; PF01410; COLFI; 1.
Pfam; PF01391; COLLAgen; 18.
ProDom; PD000007; Collagen; 3.
ProDom; PD002078; Fib_collagen_C; SWART; SM00038; COLFI; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q63079;
Q63079;
01-NOV-1996
                                                                                                                                                                     Submitted (FEB-1998) to the EMBL/Gen EMBL; Z78279; CABO1633.1; -. InterPro; IPR000087; Collagen. InterPro; IPR000085; Fib_collagen_C. InterPro; IPR001007; VWF_C.
                                                                                                                                                                                                                                                                                                                                                                         STRAIN-Spraque-Dawley; TISSUE-Tooth;
STRAIN-Spraque-Dawley; TISSUE-Tooth;
Brandsten C., Lundmark C., Christersson C., Hamm
"Expression of Collagen alphal(I) mRNA variants
Formation in the Rat.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JUN-1998 (TREMBLIEL 06, 01-OCT-2002 (TREMBLIEL 22, Collagen alphal (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-JUN-1998
01-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa;
Mammalia; Eutheria;
                                      PROSITE;
                                                                                                                                                                                                                                                                                                STRAIN=Sprague-Dawley;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus norvegicus (Rat).
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                                                         SM00038; COLFI;
SM00214; VWC; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                        PS01208;
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(TrEMBLrel.
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llarity 100.0%;
Conservative (
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                                      VWFC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              58805
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                                                                                                                                                                                                                                                                                                TISSUE=Tooth;
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22,
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17,
22,
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Last
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 80;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Ver
Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
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Sciurognathi; Muridae;
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annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                Hammarstrom
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PRRIOR REPORTED TO THE PRESENTATION OF THE PRE
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076045
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Best Local S
Matches 15
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076045;
                                                                                                                                                                                                                                              "Completion of the last half of the the Pro alpha 1 (I) chain of type I Matrix 11:375-379(1991).
                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
MEDLINE=92157916; PubMed=1787829;
MEDLINE=92157916; Constantinou C.D.,
                                                                                                                                                                                                                                                                                                                                                                                                              "Highly conserved sequences in COLIA1 gene bind cell-specific FEBS Lett. 279:9-13(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tromp G., Kuivaniemi H., Stacey A., Shi
Jaenisch R., Prockop D.J.;
"Structure of a full-length cDNA clone
of human type I procollagen.";
Biochem. J. 253:919-922(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. MEDLINE=89025644;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1998 (TrEMBLrel. 01-NOV-1999 (TrEMBLrel. 01-OCT-2002 (TrEMBLrel.
SEQUENCE FROM
                                                                              scanning by conformation-sensitive gel COLIA1 mutations in 15 patients with o
                                                                                                                       Prockop D.J.;
"Analysis of the COL1A1 and COL1A2
                                                                                                                                                                                SEQUENCE FROM N.A. MEDLINE=98107942;
                                                                                                                                                                                                                                                                                                            Olsen A.S., Prockop D.J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-88329734; PubMed=2843432; D'Alessio M., Bernard M., Pretorius P.J., de Wet W., Ra "Complete nucleotide sequence of the region encompassir twenty-five exons of the human pro alpha 1(I) collagen Gene 67:105-115(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Fine
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human).

Metazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                       identification
                                                                                                                                                               Korkko J., Ala-Kokko
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Maatta A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A. MEDLINE=91138770;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=9606;
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Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pro alpha 1(I) collagen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .L., de Wet W., Bernard M., Ramire structural analysis of the human ter structure, Alui repeats, and pol. Chem. 260:2315-2320(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15;
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llarity 100.0%;
Conservative
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                                                                                                                                                                                   PubMed=9443882;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PubMed=1995349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PubMed=3178743;
emi H., Stacey A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed=2857713;
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Last annotation updat
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                               inen R.P.;
the 3'-untranslated
nuclear proteins.";
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Mismatches 0;
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human pro-alpha 1
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                                                         of
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                                                                                                                                                                                                                                                                    structure of procollagen
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                                                                          enes by PCR amplification and electrophoresis identifies osteogenesis imperfecta type
                                                           null-allele
                                                                                                                                                               Nuytinck
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                                                                                                                                                                                                                                                                    (COL1A1).";
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                                                                                                                                                                                                                                                                                                                             M. Z.,
                                                           mutations.";
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Best Local S
Matches 15
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Submitted (AUG-2002) to the EMBL/GenBank/DDBJ da
EMBL; BC036531; AAH36531.1; -
InterPro; IPR000087; Collagen.
InterPro; IPR001085; Fib_collagen_C.
InterPro; IPR001007; WWFC.
InterPro; IPR001007; WWFC.
InterPro; IPR001007; WWFC.
Pfam; PF01410; COLFT; 1.
Pfam; PF01410; COLFT; 1.
Pfam; PF01391; Collagen; 18.
ProDom; PD002078; Fib_collagen_C; 1.
SMART; SM00038; COLFT; 1.
SMART; SM000314; WWC; 1.
SMART; SM000214; WWC; 1.
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Pfam; PF01391; Collagen; 18.
Pfam; PF00093; vwc; 1.
ProDom; PD000007; Collagen; 2.
ProDom; PD002078; Fib_collagen_C; 1
SMART; SM00038; COLFI; 1.
SMART; SM00214; VWC; 1.
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Q8N473;
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Q1-OCT-2002 (TrEMBLrel. 2
Q1-MAR-2003 (TrEMBLrel. 2
Q1-MAR-2003 (TrEMBLrel. 2
Hypothetical protein.
Homo sapiens (Human).
Eukaryota; Metazoa; Chord
  093485
093485;
01-NOV-1998
01-NOV-1998
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE; PS01208; VWFC; 1.
Hypothetical protein; Collagen.
SEQUENCE 1464 AA; 139011 MW;
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NCBI_TaxID=9606;
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  (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             138630 MW;
                                                                                                                                                                                                                                                                                                                                                                             100.0%;
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Last annotation update)
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Created)
Last sequence update)
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                                                                                                                                                                                                                                                                                                                                                  Score 80; DE Pred. No. 0.0); Mismatches
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Pred. No. 0.
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Catarrhini;
                                                                                         PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                B0581F8D1C89DDE8 CRC64;
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                                                                                         809
                                                                                                                                                                                                                                                                                                                                                                                0.00097;
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                                                                                                                                                                                                                                                                                                                                                                                                                 DB 4;
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RESULT 7
Q9100
ID Q910
AC Q910
DT Q1-D
Query Match
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Best Local
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NON_TER
SEQUENCE
                                                                                    PROSITE;
Collagen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Oncorhynchus mykiss (Rainbow trout) (Salmo gairdneri). Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eukartinopterygii; Meopterygii; Teleostei; Euteleostei; Protacanthopterygii; Salmoniformes; Salmonidae; Oncorh NCBI_TaxID=8022;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-OCT-2002 (TrEMBLrel. 22, Last annotation update) Alpha 1 type I collagen (Fragment). Oncorhynchus mykiss (Rainbow trout) (Salmo gairdner Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Actinopterygii; Neopterygii; Teleostei; Euteleostei Protacanthopterygii; Salmoniformes; Salmonidae; Onc
                                                                                                                                    ProDom; PD000007; Collagen; 2.
ProDom; PD002078; Fib_collagen_C;
SMART; SM00214; VWC; 1.
                                                                                                                                                                                                                                            Pfam; PF01391; Collagen; 18. Pfam; PF00093; vwc; 1.
                                                                                                                                                                                                                                                                                                                                                                                                             Eur. J. Biochem. 268:2817-20
EMBL; AB052835; BAB55661.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Saito M., Takenouchi Y., Kunisaki N., Kimura S.;
"Complete primary structure of rainbow trout type
consisting of all1pa2(1)a3(1) heterotrimers.";
Eur. J. Biochem. 268:2817-2827(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A. MEDLINE=21257802; PubMed=11358497;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q910C0;
01-DEC-2001 (TrEMBLrel. 19,
01-DEC-2001 (TrEMBLrel. 19,
01-MAR-2003 (TrEMBLrel. 23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProDom; PD000007; Collagen; 1.
ProDom; PD002078; Fib_collagen_C;
SMART; SM00038; COLFI; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF01410; COLFI; 1. Pfam; PF01391; Collagen; 9.
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InterPro; IPR00087; Collagen.
InterPro; IPR000885; Fib_collagen_C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pro alpha chains of type I collar
Fisheries Sci. 64:780-786(1998).
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Saito M., Kunisaki N.,
                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                   InterPro; IPR000087; Collagen.
InterPro; IPR000885; Fib_collagen_C.
InterPro; IPR001007; VWF_C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COL1A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=8022;
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                                                                                                                                                                                                                                                                                                  PF01410; COLFI; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
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                                                                                                        M00214; VWC; 1.
PS01208; VWFC;
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                                                        1449 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
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                                                     137117
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Last annotation update)
                                                     MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
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  Score
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     68C056A7640FCA81
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                                                     62EEF8A7BFD652B8 CRC64;
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  75;
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  DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euteleostei;
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rainbow trout.";
  13;
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Length 1449;
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RESULT
OF SHEET SH
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                                                                                                                                                                                           093486 PRELIMINARY; PRT; b/8 AA.

1 093486; PRELIMINARY; PRT; b/8 AA.

2 093486; Tremblrel 08, Created)

1 01-NOV-1998 (Tremblrel 08, Last sequence update)

1 01-NOV-1998 (Tremblrel 22, Last annotation update)

2 1 Last annotation update)

2 Alpha 3 type I collagen (Fragment).

3 Concorhynchus mykiss (Rainbow trout) (Salmo gairdneri is oncorhynchus mykiss (Rainbow trout) (Salmo gairdneri is charyota; Metazoa; Chordata; Craniata; Vertebrata; Actinopterygii; Meopterygii; Teleostei; Euteleostei; Protacanthopterygii; Salmoniformes; Salmonidae; Onco
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Best Local S
Matches 14
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Q9YIB4;
01-MAY-1999 (TTEMBLrel 10
01-MAY-1999 (TTEMBLrel 10
01-MAR-2003 (TTEMBLrel 2:
01-MAR-2003 (TTEMBLrel 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Collagen.
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Asahina K., Obara M., Yoshizato K.;
"Expression of genes of type I and I and development of the blastema of I bev. Dyn. 216:59-71/1999
"Partial characterization of cDNA cl
"Partial chains of type I collagen
Fisheries Sci. 64:780-786(1998).
EMBL; AB000374; BAA33381.1; -.
                                                                                                        SEQUENCE FROM N.A.
TISSUE-Fibroblast;
Saito M., Kunisaki N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cynops pyrrhogaster (Japanese common newt).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Caudata; Salamandroidea; Salamandridae; Cynops.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ProDom; PD000007; Collagen; 1.
ProDom; PD002078; Fib_collagen_C;
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Pfam; PF01391; Collagen; 18.
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InterPro; IPR000885; Fib_collagen_C.
InterPro; IPR001007; VWF_C.
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EMBL; AB015438; BAA36973.1; -.
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SM00214; VWC; 1
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en from rainbow trout.";
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                  Q8VI72; PRELIMINARY;
Q8VI72; Q8VI72;
01-MAR-2002 (TrEMBLrel. 20, L
01-CT-2002 (TrEMBLrel. 22, L
01-CT-2002 (TrEMBLrel. 22, L
COllagen type II (Fragment).
Cavia porcellus (Guinea pig).
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SEQUENCE
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01-DEC-2001 (TrEMBLrel.
01-MAR-2003 (TrEMBLrel.
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Q910B9;
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Pfam; PF01391; Collagen; 6.
ProDom; PD002078; Fib_collagen_C;
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Pfam; PF01391; Collagen; 18.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Complete primary structure of rainbow trout toonsisting of al(1)a2(1)a3(1) heterotrimers."; Eur. J. Biochem. 268:2817-2827(2001).
EMBL; AB052836; BAB55662.1; -.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Ratinopterygii; Meopterygii; Teleostat; Euteleostet; Protacanthopterygii; Salmoniformes; Salmonidae; Oncor
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ProDom; PD002078; Fib_collagen_C;
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InterPro; IPR000885; Fib_collagen_C.
InterPro; IPR001007; VWF_C.
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  Eukaryota; Metazoa; Chordata;
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                                                                                   sequence update)
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  Vertebrata; Euteleostomi;
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Best Local S
Matches 12
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Huebner J.L., Clark A.E., Kraus V
Huebner J.L., Clark A.E., Kraus V
Collagen type II in the guinea;
Submitted (MAY-1999) to the EMBL,
EMBL; AR152862; AAL55558.1; -.
InterPro; IPRO000087; Collagen,
Pfam; PF01391; Collagen; 1.
ProDom; PD000007; Collagen; 1.
QBKON6;
Ol-OCT-2002 (TrEMBLrel. 2
Ol-OCT-2002 (TrEMBLrel. 2
Ol-MAR-2003 (TrEMBLrel. 2
Similar to procollagen, 1
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NON_TER
NON_TER
SEQUENCE
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O9XT25;
O1-NOV-1999 (TrEMBLrel. 12, Created)
O1-NOV-1999 (TrEMBLrel. 12, Last sequence update)
O1-OCT-2002 (TrEMBLrel. 22, Last annotation update)
Type II collogen cyanogen bromide fragment CB10 (Fragment).
                                                                                                                                                                                                                                                             TISSUE=Cartilage;
Tang B., Chiang T.M., Brand D.D., Gumanovskaya M.L., Stuart J.M.,
Kang A.H., Myers L.K.;
Molecular Definition and Characterization of Recombinant Bovine (
"Molecular Definition and Arthritogenicity.";
J. Clin. Immunol. 0:0(1999).
J. Clin. Immunol. 0:0-0(1999).
EMBL; AF13883; AAA02346.1;
InterPro; IPR000087; Collagen.
Pfam; PF01391; Collagen; 6.
                                                                                                                                                                                                                                                                                                                                                                                                              Bos taurus (Bovine).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NON_TER
                                                            Q8K0N6
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Bovidae; Bovinae; Bos
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                                                                                                                                                                                                                                                    ProDom; PD000007; Collagen;
                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9913;
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12; Conserv
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113
113 AA;
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113
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31085 MW;
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  22, Created)22, Last sequence update)23, Last annotation update)type II, alpha 1 (Fragment)
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guinea pig.",
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Pred. No.
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Pred.
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                                                            PRT;
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No.
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0.0018;
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0.0055;
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RESULT
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The FARTOM Consortium,
the RIKEN Genome Exploration Research Gr
? "Analysis of the mouse transcriptome bas
f 60,770 full-length cDNAs.";
L Nature 420:563-573(2002).
L NATURE 420:563-573(2002).
EMBL; AK028295; BAC25865.1; -.
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Best Local 9
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Best Local (
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Submitted (JUN-2002) to the EMBL/GenBa
EMBL; BC030913; AAH30913.1; -.
InterPro; IPR000087; Collagen.
InterPro; IPR000885; Fib_collagen_C.
Pfam; PF01410; COLFI; 1.
Pfam; PF01391; Collagen; 9.
ProDom; PD000007; Collagen; 2.
ProDom; PD0002078; Fib_collagen_C; 1.
     01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence up
01-OCT-2002 (TrEMBLrel. 22, Last annotation
COL2A1 protein precursor (Fragment)
COL2A1.
                              Q14046;
Q14046;
Q1-NOV-1996;
Q1-NOV-1996;
Q1-OCT-2002;
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Q8CEF7;
01-MAR-2003
01-MAR-2003
01-MAR-2003
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NON_TER
SEQUENCE
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
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Eukaryota; Metazoa; Chordata;
-145. Entheria; Rodentia;
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STRAIN=C57BL/6J; TISSUE=Head;
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Homo sapiens (Human).
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REDIENCE FROM N.A.

REDIENCE FROM N.A.

REDIENCE FROM PROBLEM C.T., Smith C., Jimenez S.A., Prockop D.J.;

REDIENCE FROM Clones coding for human type II procollagen. The clapha 1(I) chain is more similar to the alpha 1(I) chain than two fibrallar collagens.";

REDIENCE T. 262:521-528(1989).

REDIENCE T. 262:521-528(1989).

REMBL; X16711, CAA34683.1; -...

REMBL; X167
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